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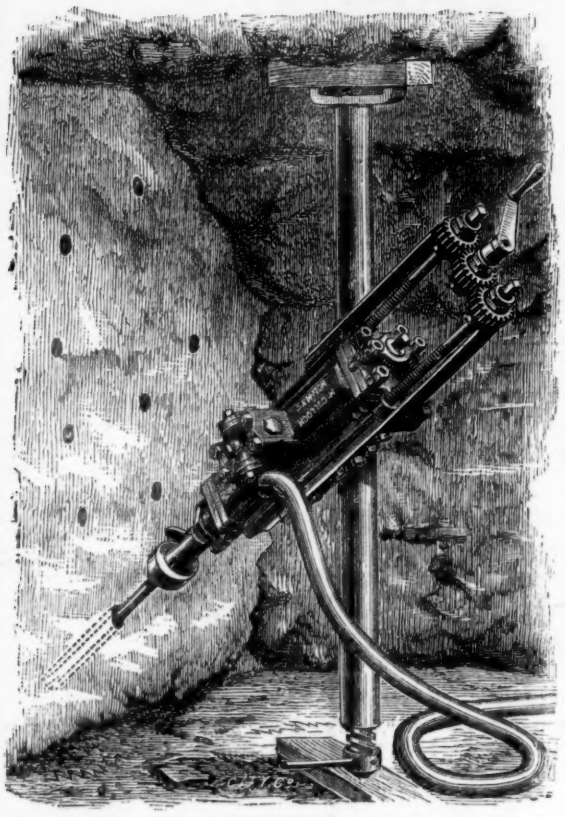

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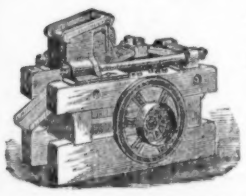

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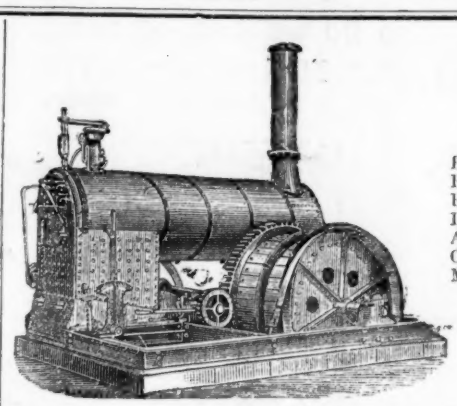

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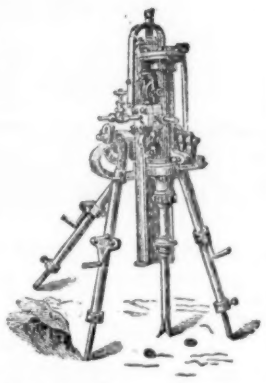

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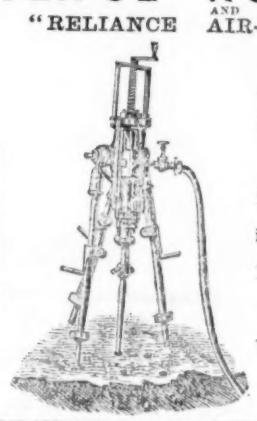

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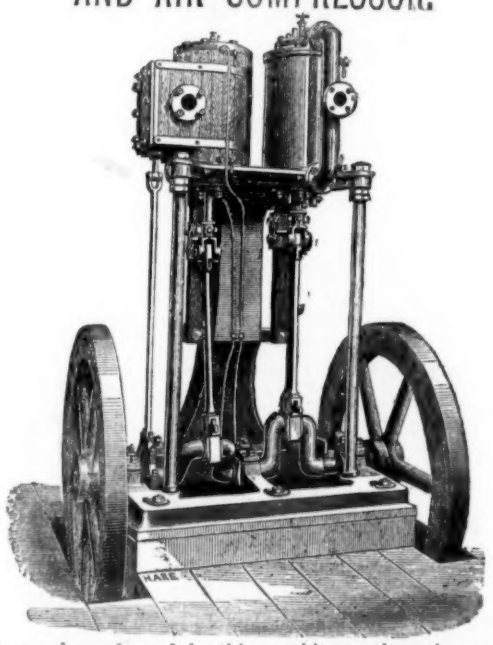

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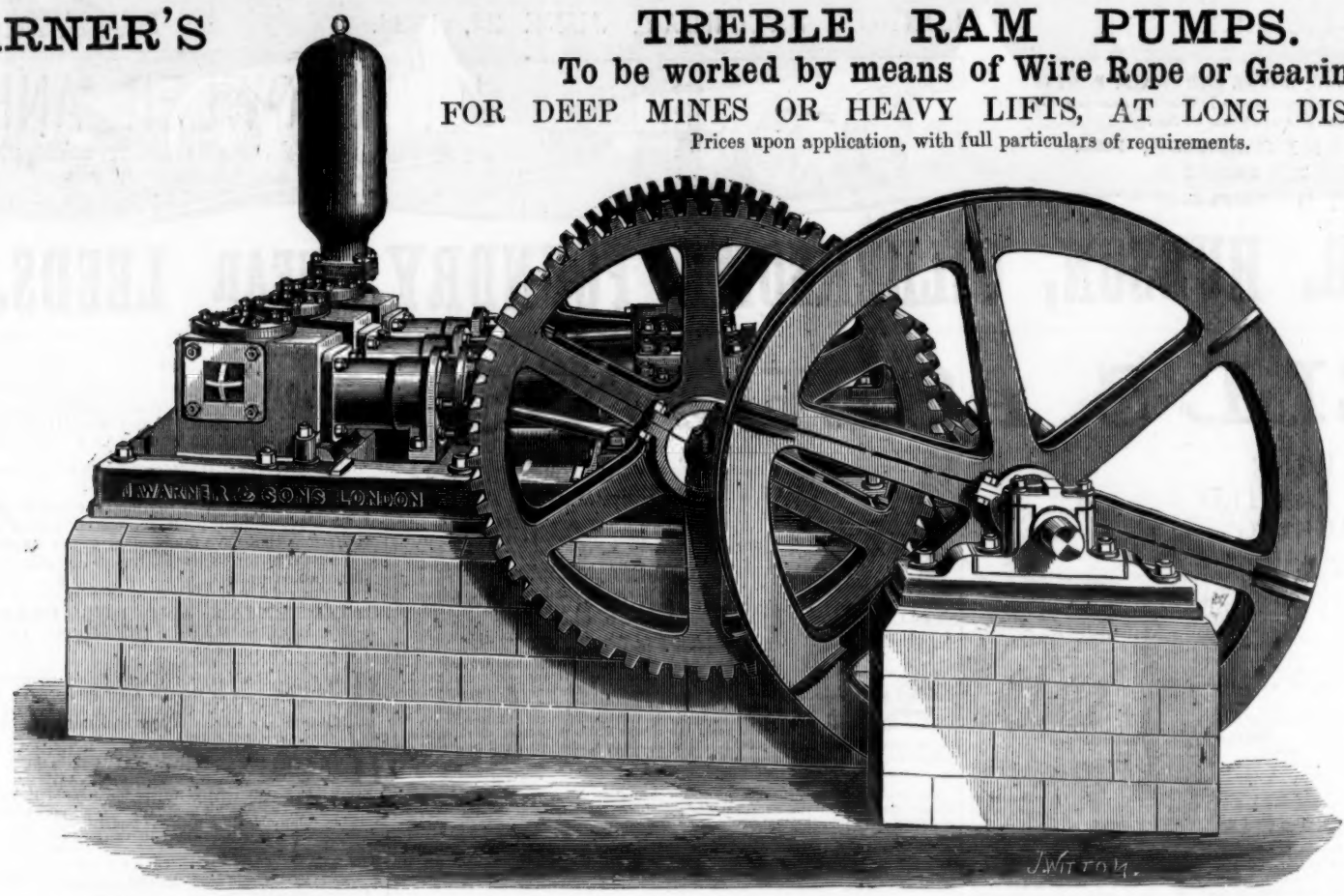

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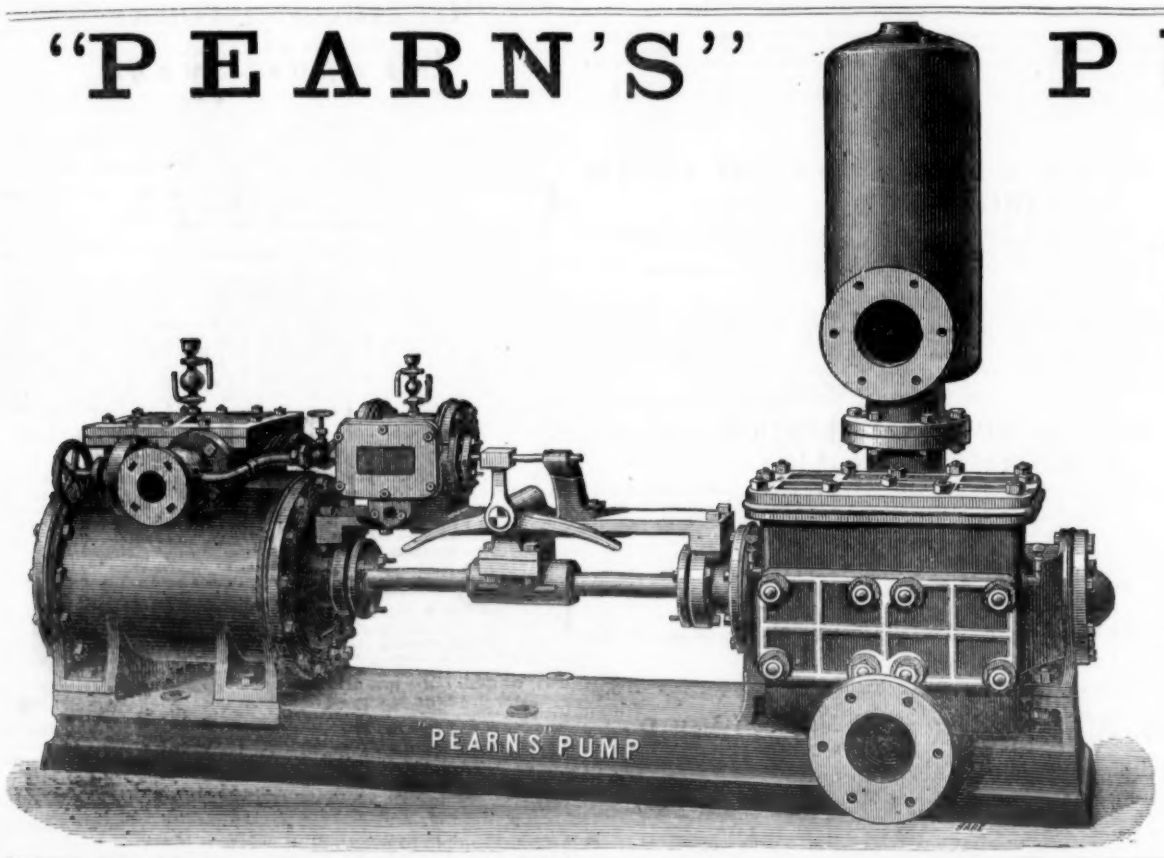

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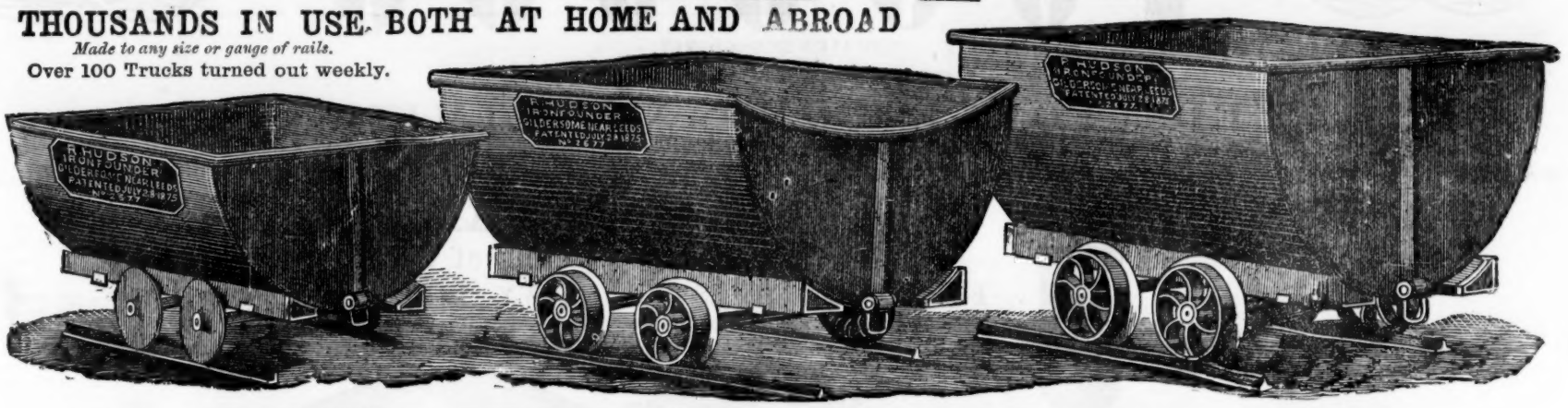

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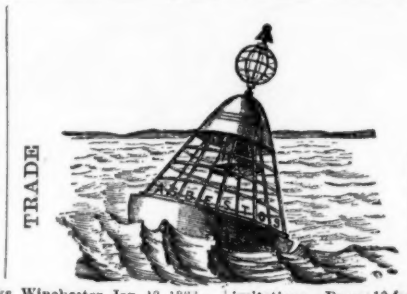

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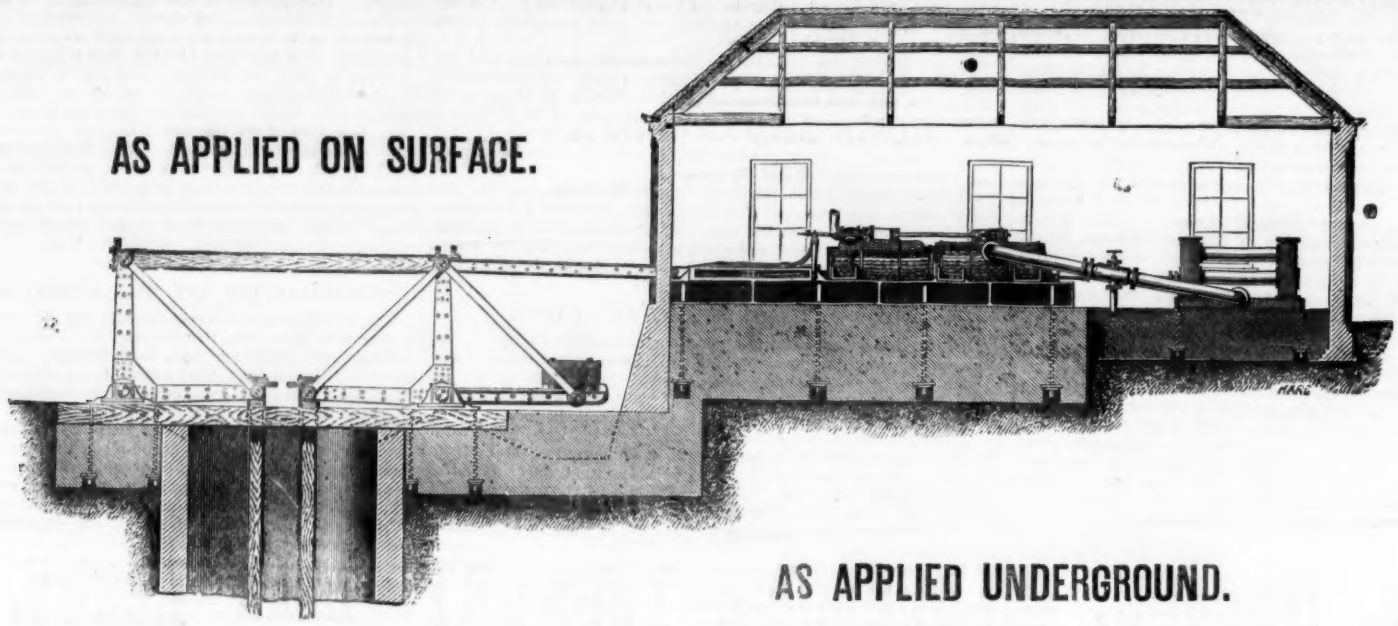

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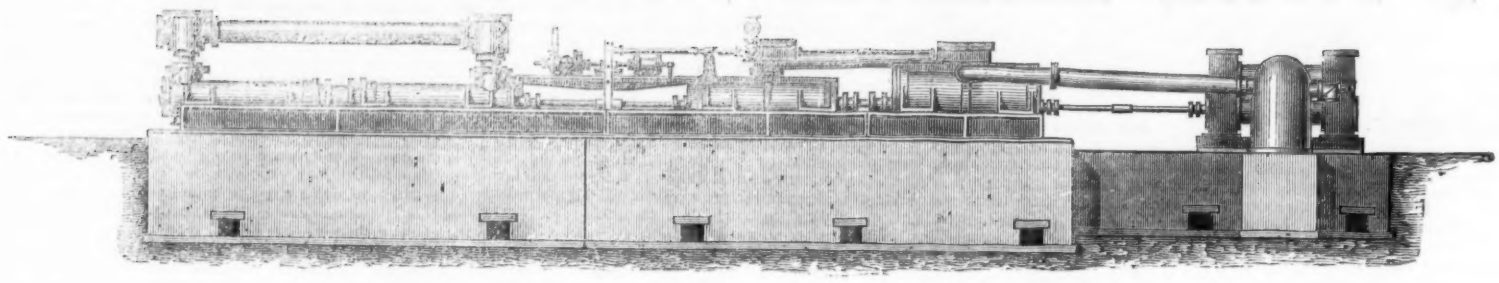

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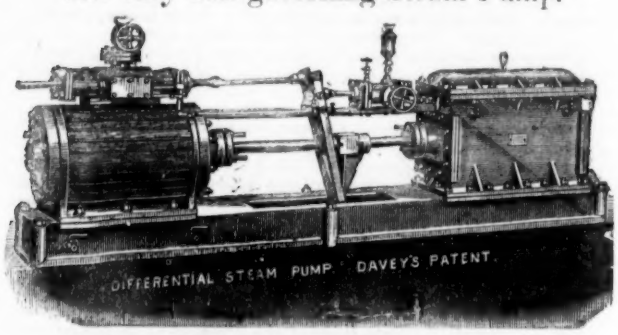

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10	5	15	5,200	250	65	72	85	5¾	1½	2½
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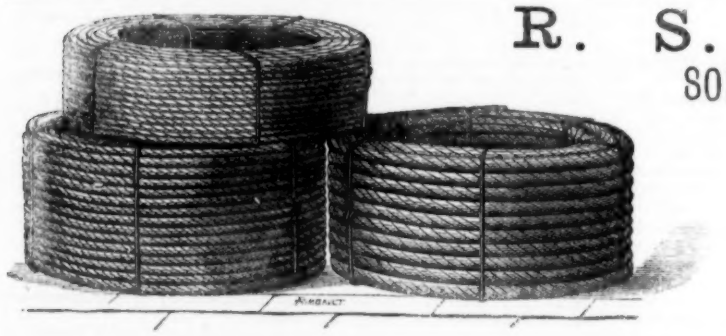
12	6	24	6,500	250	90	104	130	5½	2	2½
12	7	24	10,500	180	96	110	136	6	2	2½
12	8	24	13,500	140	100	114	142	7	2	2½
12	10	24	21,300	90	120	136	175	5½	2	2½
14	7	24	10,400	250	110	130	156	5½	2½	3
14	8	24	13,500	190	120	145	165	6	2½	3
14	9	24	17,300	150	130	150	172	6½	2½	3
14	10	24	21,300	120	140	162	190	7½	2½	3
14	12	24	30,800	80	160	190	216	9	2½	3
16	8	24	13,700	250	140	170	195	6	3	3½
16	9	24	17,300	200	150	180	215	6½	3	3½
16	10	24	21,300	160	160	196	225	7½	3	3½
16	12	24	30,800	110	180	220	246	9	3	3½
16	14	24	42,000	80	200	242	264	10½	3	3½



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RESOURCES OF THE ROCKY MOUNTAINS.

SIR,—The next portion of Mr. Farmer's interesting work (Resources of the Rocky Mountains. By E. J. Farmer, author of "Statistics in Relation to Gold and Silver," published at Cleveland, Ohio) treats of Utah. The Iron Queen of the Rockies—the great Salt Lake—the history, characteristics, and salt producing qualities—the gold and silver producing districts and their yields—the iron and other mineral wealth of the territory. This territory lies between 37° and 42° N. lat., and between the 109° and 114° W. long., bounded on the north by Idaho and Wyoming, on the east by Colorado and Wyoming, south by Arizona and west by Nevada. Its length from north to south 325 miles, and from east to west 300 miles; its mean elevation 6100 ft. above the sea. It has 84,970 square miles of land and 2780 water, amounting in all to 54,380,800 acres. The Wasatch mountains divide the territory from north to south into two nearly equal parts, some of the mountain peaks rising to 12,000 ft. The eastern portion of the territory has a little arable and grazing land and a very considerable amount of coal. It is drained by the Green and Grand Rivers, which unite to form the Colorado, whose waters pass for hundreds of miles through one of the most colossal canons in the world, varying in depth from 1000 to 6000 ft. below the level of the plateaus. Close to the western base of the Wasatch mountains is the Great Salt Lake basin, which extends from north to south more than 200 miles. The Great Salt Lake is an inland sea—80 miles in length by 50 wide. The first mention of the Great Salt Lake was by Baron Le Houtan, in 1689. Captain Bonneville sent a party to explore it in 1833, but not till 1842 did the white man set foot upon its shores, when Colonel Fremont visited and described it. The water is a beautiful aquamarine, as clear as crystal, with a mean depth of 20 ft. The brine of Salt Lake holds 14 per cent. of solid matter, and being evaporated by the sun's rays deposits thousands of tons of salt each year. The price of this crude article at Salt Lake City averages $5 per ton. Not less than 12,000 tons are collected and manufactured from its waters annually, most of which is used by the smelters of Colorado, Nevada, Montana, and Utah.

Gold and silver mining began in Utah in 1870, since which time the bullion product has amounted to $60,000,000. Mines have been discovered in nearly all her mountains, of which the territory is full, but many of the mining districts have been abandoned until more capital can be had for reducing the ores, and better facilities are created for getting them to market. The productive districts at present are the Park City, Alta, American Fork, Bingham Tintic, Stockton, Frisco, Marysville, and Silver Reef, mostly now accessible by rail from Salt Lake City. The product of gold, silver, and lead for 1882 was nearly $10,000,000, giving Utah the fifth place in the list of gold and silver producers. Colorado being first, California second, Nevada third, and Arizona fourth. In the Park City district the Great Ontario Silver Mine is located, which has produced over $11,000,000, while it is said its productive period has only really began, the average value of the ore taken out being $100 per ton. The Alta district includes the Little and Big Cottonwood Mines, and has communication by rail with the smelters in the Jordan Valley. Silver Lake district, which is included in that of the American Fork, has a number of mines that show large bodies of low grade ores. The Bingham Canon district contains ores in which lead largely predominates. The mineral belt is broad, and contains many fissure veins. The silver-lead ores have been worked for years, but the gold ores of this district have as yet been scarcely touched.

Of the iron and gold ores Prof. Newberry says:—"The ore in the Yosemite, Jordan, Utah, Red River, Spanish, Stewart, &c., varies from 25 to 50 ft. in thickness, and as the strata are deeply cut by the ravines the outcrops are sometimes 100 ft. above the drainage and water levels. The quantity of ore is enormous, is soft, and mined with facility. It is stated that with efficient machinery the gold production of the Bingham may become as great and profitable as that of the Black Hills."

It is intimated that "this district has produced 500,000 tons of ore during the past ten years; yielding $8,800,000 in silver, $1,500,000 in gold, and $5,500,000 in lead, amounting in all to $15,300,000. The Horn Silver Mine has produced over $6,000,000. The ore is a decomposed argentiferous galena, averaging $50 per ton. The vein is 50 ft. thick, of clean ore. It is owned by the Horn Silver Mining Company, and is capitalised at $10,000,000. This company also own extensive lead refining works at Chicago, and their dividends have been $300,000 quarterly. The Marysville district is in one of the best endowed parts of Utah, plenty of water and timber. The ores are gold and silver, worth about $30 per ton; veins from 12 to 20 ft. wide.

In the Silver Reef region the principal mines are the Tecumseh, Stormy King, California, Maggie, and Silver Flat; the Christy Mining and Milling Company have taken out 50,000 tons of ore, yielding $1,300,000, or about $28 per ton. The Stormont Silver Mining and Milling Company have paid $145,000 in dividends. It is thought that other parts of the Buckeye and White Reefs will be made as productive as the Silver Reef, which during the past five years has produced $4,000,000. The deposits of iron ore near Iron City and Iron Springs, in South-western Utah, are probably not excelled in intrinsic value by any in the world. The ore is magnetic and hematite, and occurs in a belt 15 or 20 miles long, and three or four miles wide, along which are frequent outcrops of compact massive ore, of the richest quality. It is said there are no such rich deposits of iron ore west of the Mississippi.

Coal Lands: It is intimated there are 20,000 square miles of coal land in Utah, and the united thickness of their veins is 165 ft. They lie chiefly along the eastern slope of the Wasatch Mountains. The Denver and Rio Grande Railway, now building from Gunnison City, Colorado to Salt Lake City, passes directly through these coal fields. Utah has her full complement of other minerals. Extensive deposits of antimony has been found 40 miles east of Marysville, on the Sevier river. Sulphur is also found in great abundance.

Rock-salt, as clear as crystal and almost perfectly pure, is mined on the Sevier river and in Salt Creek Canon. Gypsum is found in both a crystallised and oxidised state in San Pete County. Shale beds extend over an area of 1000 square miles, and are from 60 to 100 ft. in thickness. A portion of them are rich in gas and paraffin oils, while underlying their strata is a bed of "mineral wax," 12 in. in thickness. Copper is found extensively in the Tintic, Snake river, and Cottonwood districts, as also bismuth. In the land-locked valleys excellent crops are raised by means of irrigation, which makes the land very fertile. In some portions of Utah cotton is grown. Nine lines of railway already traverse the territory, and make possible the rapid development of its resources. There are the Union Pacific, Utah Northern, Utah Central, the Salt Lake and Western, San Pete Valley, Utah Eastern, the Echo and Park City, the Utah and Nevada, and the Denver and Rio Grande. Utah also contains a number of mineral and hot springs. It has a population of 170,000, of which Salt Lake City contains 30,000. The territory of Utah offers a large field for the profitable development of its mineral resources.

THOMAS CORNISH.

INDIAN GOLD MINES—THE COLAR DISTRICT.

SIR,—"Hope" in your last tells a flattering tale anent the above, but I very much question whether Mr. Moon was not quite right in what he has said about the place, and as to his own part of it there cannot be much doubt for anyone who has seen it. It is a pity that "Hope" does not give his real name, and a still greater pity that "Shareholder," whom he quotes, should not have been on the field about 18 months ago, and saved many of us from, so to say, "cutting their own throats" to get away from the hole anyhow. If we had only had such a man to jam his crowbar into the reefs—and at hazard, too—and bring out samples of gold quartz averaging from 30 to 40 ozs. to the ton, why we should all have been as merry as sandboys, and cut the Vice-Chancellor out of some jobs.

The Balaghat Company have always worked very quietly, and this is the more remarkable because as the company was, according to "Hope's" own showing, formed by the concessionaries and their friends, one would think that a little success would have considerably assisted in the circulation of "shinplasters" over here. I can answer for it that the natives do not believe much in these articles. Why on earth so much time has been wasted on the field to get to a depth of about 160 ft. might perhaps be answered by anyone acquainted with the facts. In his last paragraph "Hope" speaks about the Ooregum crushings. Have two 100 ozs. been got out consecutively? Bangalore gossip is not worth much. In your market article you say that news has been received from the manager that 200 tons of quartz were crushed during May, yielding 38 ozs. 3 3-10 dwts. per ton free gold. I never saw gold in any other state on that field, and think it will be a long time before it is met with in any other condition. But is this a misprint for 380 ozs.? if not Ooregum wants the services of the aforenamed "Shareholder" and his crowbar both to find the gold and help the quartz through the good stamps they were finishing when I left the locality.

The fact is that the reefs in the Colar district are poor, that the gold occurs in shoots, that between these shoots are intervals of barren rock, and that no one can at present say how far these shoots continue in depth. Getting hold of a small piece of stone from a shoot one might have an assay of any number of ounces per ton, but taking a fair sample from the whole bulk I do not think that more than 4 to 5 dwts. per ton can be reckoned on. The whole field lies in a sort of granite basin, the reefs do not dip nicely, but lie more with the slate, like beds, and if it were a true gold field I should say the nullahs would be far richer than they are when tried by panning. My own experience showed an entire absence of anything like coarse gold in the nullah beds.—*London, June* 20. HENRY J. MORITZ.

INDIAN GOLD MINING, AND ITS FUTURE.

SIR,—In last week's Journal your correspondent "Hope" gives some encouraging details concerning the Honnali gold fields, which I should like to supplement. I attach little importance to isolated stones yielding 30 ozs., 40 ozs., and 800 ozs. to the ton; but when 3 or 4 cwts. of stone is treated with really marvellous results, something better than has yet come from India may really be looked for. One writer declares that he has himself tested pieces of stone from Turnbull's reef in the Honnali gold fields, and obtained from 80 to 554 ozs. of gold to the ton. These fields are situated in the north of Mysore, and close to the Bombay frontier. These gold fields are scarcely known, and are being quietly worked by companies in India. Much has been said of people being deluded in England into investing in Indian gold mines; but people in India have also freely invested in mines in India. He appends extracts from the report of the United Pyrites Company of Sandhurst, in Australia, on the quartz sent from three reefs in the Honnali gold fields by Messrs. Wilson and Co., of Madras, who are now, in conjunction with the East India Company for Exploration and Mining, of Glasgow, engaged in working these reefs. It will be observed that the stone sent was not picked stone, and showed no traces of visible gold, yet the results obtained were above the average of that colony, which rarely exceeds 15 dwts. per ton. Surely such results fully justify a belief in the eventual success of the *bona fide* mines in India.

The report of the United Pyrites Company of Sandhurst, to which this gentleman refers, is signed by Mr. Thomas Edwards, the managing proprietor of the concern, and is dated just a year ago last Saturday, so that it is fair matter for historical criticism. Mr. Edwards says that three bags, marked respectively No. 1, Turnbull reef, No. 2, Smyth's reef, and No. 3, Bill's reef, were received, and each of them treated separately. The same ore was put through an ordinary stamp battery and amalgamated in the usual way. The tailings were saved and burnt in a reverberating furnace and then chlorinised. The first was from Turnbull's reef, and the mineral weighed 190 lbs.; it yielded from amalgamation 7 ozs. 13¼ dwts., and from the chlorinised tailings 2 ozs. 2¾ dwts. = 9 ozs. 16 dwts. of gold to the ton of stuff. The second bag was from Smyth's reef; it weighed 144 lbs., and yielded 1 oz. 16⅞ dwts. from amalgamation, and 7⅛ dwts. = 2 ozs. 4⅛ dwts. of gold to the ton. And the third bag from Bill's reef weighed 185 lbs., and yielded 1 oz. 14½ dwts. from amalgamation alone; the chlorinised tailings were not treated. With regard to these results Mr. Edwards remarks that "the yield in all the three instances is remarkably good, and that of No. 1 exceedingly so. All are above the average of this colony, which rarely exceeds 15 dwts. per ton. To me these results appear the more astonishing, as judging from the appearance of the quartz (there being no gold visible to the eye) there was nothing to indicate such richness. I must particularly draw your attention to the large percentage of gold obtained of the chlorination of the tailings, which in No. 1 amounts to more than one-quarter and in No. 2 to more than one-fifth of the yield by amalgamation. This indicates the presence of much fine (light) gold, so that care must be taken to use extremely fine gratings (400 meshes to the square inch), giving the tables a small slope (square ½ in. to the foot), and using very little water, just enough to keep the tables clear of sand. With such precautions you will be able to save much of the gold present in surface stone (such as you have sent for treatment), but when the sulphides are met at greater depths the tailings will have to be saved and chlorinised."

Now, before I adopt the very hopeful views of "Hope," I should like to learn how much stuff has been raised since the 3 cwts. mentioned, and what gold has been extracted. The facilities for obtaining rich gold quartz samples in Victoria are so great that I should prefer to know the result of treating rock in India.—*June* 18. DUBIOUS.

MINING IN SOUTH AUSTRALIA.

SIR,—We are at present suffering very severely in this colony from "hard times," brought on by three bad harvests, over importation, and excessive speculation in land. The money market, too, is exceptionally tight, so that mining is not receiving that attention which it otherwise would obtain. Nevertheless, it is not altogether neglected; on the contrary, in some localities it is being vigorously prosecuted. The greatest discovery of copper which has been made for some time is about 35 miles from the Northern Railway, in a north-easterly direction from Beltana, and not very far from Mount Rose Mine. The new mine is called the Victory, and is the property of the Beltana Prospecting Association. Several tons of very rich ore have been raised and forwarded to the E. and A. Copper Co.'s Smelting Works at Port Adelaide. The average produce of the whole is, I believe, fully 35 per cent. of pure copper; but some of it gives a return as high as 65 per cent.

The greatest depth at present sunk is about 10 fms., where water has been struck, and rich yellow and purple sulphide ore met with. The lode is said to be a true fissure lode, and experts who have inspected it, amongst whom is Capt. Bryant, of the Blinman Mine, have expressed the highest opinion of its appearance and prospects. The progress of mineral discovery in the north is greater than ever, but with the price of copper down to 66*l.* 10s. in London, what management is there to work? The Willoman Mine, 30 miles from the present terminus of the Great Northern Railway, was for a time under a cloud, owing to certain false and damaging reports circulated by a person who visited the mine, but, though only a few hands are employed, good ore, of 24 per cent. average, is raised in sufficient quantity to pay all expenses. The railway extension from Farina to Hergott Springs will be completed about the end of the year, and will pass within about 8 miles of the Willoman Mine which will then receive a great impetus.

It is rumoured that a syndicate has taken up a number of valuable mineral sections to the north of the Moonta Mine, with the view of floating a company in England to work them. These sections (80 acres each) were worked some years ago, and some excellent copper was raised from them; but a general collapse in mining took place afterwards, and they have since been neglected, though they are right on the run of the Moonta lodes. The workings were scarcely carried to a sufficient depth to thoroughly prove the value of these sections, as the lodes are believed to lie rather deeper than in the Moonta Mine; but as the latter has proved so productive and profitable in depth, there can be no reasonable doubt that the claims adjoining them on the north will also prove profitable—indeed, one of the mines there, when worked, paid a dividend of 10s. a share from the ore raised from a shallow depth. It is said that three men raised 1000*l.* worth of ore in a week: this was probably when copper was 100*l.* a ton. Anyway, the ground is well worthy of the expenditure of a few thousand pounds, as it adjoins one of the richest copper mines in the world, and is within 10 miles of Port Wallaroo and the smelting-works there; and the railway to Wallaroo runs almost alongside the shafts of these mines.

A select few of our gold mines, which have been steadily and properly worked, bid fair to become permanent and payable. In connection with gold mining, I may mention that Capt. S. Osborne, formerly of the Kapanga Mine, and Mr. Andrew Thomas, F.C.S., a clever analytical chemist of this city, have for several months been conducting a series of important experiments on a new process, which they have patented, for extracting and saving gold from the matrix. This process is especially adapted to separate gold from pyrites or other refractory metals or combinations, and has been so successful in its results that the gold saved has in some cases been actually a little in excess of that shown by the ordinary fire assay. In a recent trial the ordinary assay gave a return of 7 ozs. 10 dwts. 22 grs. to the ton, the new process giving 7 ozs. 11 dwts. 4 grs. In this instance the old process of mercurial amalgamation gave, I believe, less than 2 ozs. per ton. In other cases there has been even more difference in the results. This discovery or invention cannot fail to prove of immense importance to the future of gold mining, and as in this colony a large proportion of the gold exists in pyrites, ironstone, and even in combination with copper and galena, we may hope for the introduction of a new era in connection with gold mining in South Australia.—*Adelaide, May.* J. B. A.

COLORADO—THE SAN JUAN MINING REGION.—No. I.

SIR,—In my last letter, published in the *Mining Journal* of June 2, I described how the Denver and Rio Grande Railway had built through our midst, and had been bringing hundreds of gold and silver mines into pay, that erstwhile lay idle for want of shipping facilities, developing thousands of acres of anthracite and bituminous coal, and converting barren lands along its line into fruitful farms and well-stocked cattle ranches. I also showed that, while the actual success of the country is an accomplished fact, by reason of the richness and abundance of its ores of gold, silver, copper, and lead, and the enormous area of its coal fields, now in the immediate vicinity of a through line of railway westward to the Pacific coast and eastward to the great cities and seaboard of the Atlantic slope, this south-western corner of the State of Colorado, known as the San Juan region, is comparatively unexplored. By this I mean that its mineral riches are not half known, and its mountains, valleys, and streams have not been half prospected.

Wonderfully rich discoveries are being made almost daily, and will continue to be made for the next 10 years or more, and it was for the above reasons that I asserted in my last that the San Juan, with the town of Ouray as headquarters, or an outfitting point, is the place for the capitalist or the prospector. He who goes there now has immeasurably the advantage of us who went there in the "early day." We knew, of course, that the country was phenomenally rich, and that, some day or other, a railway would come along, and those riches would be turned to account; but whether that "some day" would come in our time, and before our hair was too grey to admit of our enjoying our successes, was extremely uncertain. On the contrary, the man of capital who goes there now, whether to mine or farm, sees a ready market for his produce—sees that he can turn his ores or his crops into cash on the spot, and that, therefore, his only look-out is to get a good mine or a good farm, and manage it properly. So, too, with the prospector; he sees that, if he discovers a good claim or mineral lode, if he has not the necessary capital to work it successfully himself, he can readily sell it to those who have, or can dispose of a portion or "interest" for money to be put into development. The town of Ouray, where I now live, is reached by rail from New York, *via* Denver, as far as Montrose, on the line of the Denver and Rio Grande Railway, and thence by coach 35 miles to Ouray, which latter distance is driven in five hours, over a good road and through a marvellously pretty country, known as the Uncapahgre Valley. The coaches are drawn by six horses, with three changes of horses between Montrose and Ouray.

My partner and I went into the mountains about Ouray early in the spring of 1877, I having prior to leaving London taken a course of instruction in assaying at the Royal School of Mines in Jermyn-street. Ouray was then a little place of two dozen houses, 300 miles from a railway. There were but few men in the mountains, and but few mines worked, though thousands had been discovered. The hills abounded with bear, lynx, wolverines, and other big game. Good food was hard to procure at any price, and no ore would pay to ship out by wagon that yielded less than 200 ozs. in silver to the ton. This reads like a very bleak look-out, but I looked about me, and on every side Nature was one great unvarying promise and prophecy of success. The mountains at altitudes of from 7000 to 11,000 ft. above sea level, whose sides were ribbed and seamed with rich veins, were clothed with pine forests, to furnish timber and fuel for the mines and miners of the future. In the mountain basins and on the banks of their streams I found wild fruit and vegetables necessary for the miners' healthful food—cress, onions, rhubarb, celery, black currants and raspberries, and nutritious grasses for food of the animals employed during the summer to carry ore down and supplies up. Going on down to Ouray, the natural supply and ore market, and site of reduction-works for these mines, I saw upwards of 20 hot mineral springs emptying their contents into the river at a point where some day extensive mills and sampling-works will be built; this hot water preventing any ice forming even in the severest winter. On some of these hot springs are now built baths, where the miner, weary with his day's work or tramp down from the hills, may have in comfort, or by a course of bathing, rid himself of any touch of rheumatism which he too often contracts at his work. Then I saw all round me immense beds of bog iron ore, veins of hematite and specular iron, veins of fluor-spar, beds of limestone, fire-clay, and huge veins of coal—all important factors in the reduction of ores. Then below Ouray, in the park traversed by the Uncapahgre river, and on the Dallas Fork of the same stream, 20 miles of beautiful meadow land and upland, where could be raised food of all kinds for man and beast, and the brooks full of trout, and the hills abounding with deer and other big game. Add to this a perfect climate, and what more was there to want? In this wonderful correlated grouping of all the natural products needed by man to enable him to extract the ores of gold and silver from the mountains and the metals from their ores, I saw providential design, and that prophecy of success which within the present year has been fulfilled, mainly by the advent of the Denver and Rio Grande Railway.

During the past two years my mining partner, in order to satisfy us both, has been steadily prospecting in Arizona, New Mexico, Old Mexico, and California, and though finding in all these countries very rich mining districts, there was always some attending drawback. In one there were occasional fearful droughts and raiding Indians; in another the climate was bad, and a scarcity of timber and water; in another it was impossible to get good title to your property, or justice in going to law; or the ores were rich on the surface and played out with depth, and the country infested with brigands. So, last month he returned to Ouray, satisfied that the San Juan region is the miner's and prospector's paradise. In my last letter to your paper I stated that the San Juan region is a good point for the capitalist. The question will naturally be asked why, and how?

I pointed out two years ago that some of the Indian gold mines were a farce, judging from the prospectuses alone, which said there undoubtedly "had been," and, therefore, "should be" a great deal of gold, but gave no evidence whatever of real or existing value. How have they turned out? And now a new crop is springing up. Men go into an office in London, and they are shown a magnificent lot of specimens—gold in nuggets, gold in retorts, gold in quartz, and gold in sand—and they are also shown assay certificates of enormous yields of gold from certain lots of quartz sent to the most reliable London assayers. But they never ask themselves the following questions:—How do I know these specimens came from where they are said to? If they did come from there how do I know they were not put there first? If they really were found there how do I know from what extent of ground, and with what search, labour, and time they were found; and whether, therefore, the gold exists in

paying quantities? Granting that this gold does exist in paying quantities on the surface as stated, how do I know that it will not "play out" with depth, which gold in veins or reefs sometimes does? Suppose it is a first-class property in every way, and as rich as represented, what voice have I in the management, and what assurance have I that it will be efficiently and honestly managed? as the best mine in the world will not pay without. Out of the sum being paid for this property how much is being absorbed by middlemen and promoters?

Two years ago I was taken into the office of one of the Indian gold mines in London, and shown a really magnificent display of gold specimens, which only failed to excite me, because I knew the tricks of the trade. But that gold mine has not paid a shilling yet, and it is not likely, I hear, that it ever will. Suppose, for instance, a man has 500*l.*, which he intends to invest in some of these shares. Let me suggest what I consider a better investment. We will suppose him to be a man of means, and one whom on account of his age, or other reasons, does not care to go abroad or rough it. There are, doubtless, some young men of his acquaintance, or among his relatives, who cannot obtain suitable employment in England, and who has energy, industry, and business tact enough to succeed abroad, if he be given a fair start. Now, why not invest the 500*l.* with him, and send him to Colorado as a prospector to search for mining claims?

The first thing necessary would be a three months' course of instruction in the assay of the ores of gold, silver, and lead, either at the Royal School of Mines at South Kensington, or some other good school of metallurgy; cost (say) 25*l.* His outfit, which would consist mainly of plenty of strong rough clothes, an aneroid barometer reading to 16,000 ft., and a compass, and one magnifying glass; say, 50*l.* His passage money to Ouray, or any other town in the San Juan region; say, 60*l.*, which, of course, is travelling first-class, and includes Pullman fares and "grub" on the road; say, 150*l.* altogether. He is then in San Juan with 350*l.* in his pockets. His next step is to engage a good practical miner or prospector to go with him into the hills. He can get the services of such a man for 12s. a-day and his board, which for four months would amount to about 72*l.* His two pack donkeys or burros will cost him 12*l.*, and his food, powder, fuse, tools, tent, blankets, and cooking utensils, say, 45*l.*; to give it a wide margin—say, 150*l.* He then has his work cut out for four months, everything paid for, and 200*l.* in his pocket. If he discovers any lodes he, of course, claims and records them in his own name, and the name of his patron who outfitted them. The United States mining laws, which are most liberal, give him 1500 by 300 ft. on the course of the vein, and he can locate and hold as many of these claims as he can do the annual assessment on (the work prescribed by law), which amounts to about 20*l.* each. Or if he does 100*l.* worth of work on each he can get a United States patent to his property; this being absolute title, and costing about 50*l.* each. Having discovered some good mining claims, recorded, and worked them, whether he and his patron sell them, or put capital into working them, after critical examination by a competent mining engineer, are questions for after consideration, but it does seem to me a better and more sensible way of investing 500*l.* then by buying shares in a mine about which you know nothing except on the evidence of interested parties, and in the management of which you have no knowledge, voice, or control. WM. WESTON.

New York, June 6.

COPPER MINES OF CHILI.

SIR,—While so many persons are seeking for sound investments which will give them a large return with a moderate amount of risk it is surprising that Chilian copper mining companies should not have attracted more attention. The Panulcillo shares do, indeed, command a premium of 62½ per cent, but as they pay 15 per cent. on their par value an investor obtains fair interest on his money. The Copiapo shares are, however, quoted actually at a discount, although the profits for the year ended June, 1881, were 17,271*l.*, and for 1882, 19,783*l.* The earnings for the nine months ended March, 1883, were 16,236*l.*, as against 12,133*l.* for the corresponding period of the previous year. In addition to these profits the company works a large agricultural estate, from which it has during the past two years derived a further income of about 2500*l.* per annum. The dividend paid to June, 1881, was 8 3-16 per cent., and to June, 1882, it was equal to 16 per cent.

In order to increase their working capital the directors last December disposed of 2450 shares which were forfeited in the early days of the company, the public being then eager buyers. As only about 5500*l.* of the proceeds of this sale belonged to capital the balance, some 4000*l.* odd will be applicable to revenue or reserve at the end of the current financial year. The fall in the price of copper and weak holders have caused realisations; but the monthly reports issued by the company show that they are actually making larger profits this year than in 1882. The dividend for the 12 months to June, 1883, may be safely estimated at the same figure as for 1882—16 per cent. The directors paid an interim quarterly dividend of 1s. 6d. last March, and they have just declared a second quarterly dividend of the same amount payable on Friday. It is, perhaps, a pity that the Panulcillo Company does not follow the example of the Copiapo, the Cape Copper, and other mining companies in paying quarterly dividends. Shareholders are always pleased to receive a small dividend every three months as affording the best possible evidence that the undertaking is progressing favourably.

Contrasted with other copper mining shares, Panulcillo and Copiapo shares are not fairly appreciated. Rio Tinto shares, paying 14 per cent., stand at 115 premium, giving only 6·36 per cent. on the money. Mason and Barry shares, paying 12½ per cent., stand at 45 premium, yielding 8·62 per cent. English and Australian Copper shares at 1¼ yield a return of 8 per cent. Panulcillos, paying 15 per cent., are at a premium of 62½, giving a return of 9·37 on the present price of 6½. Copiapo yield to an investor at least 16 per cent. Copper is dull; but the Chilian mining companies have shown that they can make good profits at low prices. If copper should improve in value there would be a rapid spurt in the quotations of all mining shares, but more especially in those which are now unduly depressed.

London, June 20. J. C. B.

MINING IN SPAIN—ASTURIAS—No I.

SIR,—A copper mine, celebrated long since for the quantity and quality of its produce, in the district of Onis was offered me on lease by its owners; as the conditions were not onerous I determined to inspect it anew. Since I had already visited it some two years ago in the company of two English gentlemen with a view to acquire it provided its inspection proved satisfactory, as the journey thereto may, perhaps, be of some slight interest to some of your readers, I have determined to note its features in the following lines:—I started from Oviedo by diligence at 6 A.M., reaching my destination (Onis) the same evening. The geological features of the route between Oviedo and Onis, in so far as can be observed by a cursory examination from the windows of a stage-coach, are as follows:—The road over which I travelled from my starting point to Pola de Siero (a town of about 5000 inhabitants, and celebrated in the country for its numerous and important cattle fairs) is monotonous, since it is carried over a flat plain, which consists of Keuper sandstone of a light yellow colour, conglomerate, and alluvium successively, up to nearly where the road crosses the Langreo railway, when the new red sandstone is met with, followed by yellow and grey siliceous sandstone, which continues to about two miles beyond Pola de Siero. I note that the whole of this district has been set down in Schultz's map as cretaceous. The gypsum quarries around Oviedo in the Keuper seem to indicate that there is an error, and that instead of the district being of the cretaceous formation, that formation will have been completely denuded as well as the jurassic (oolite and lias), and that Oviedo really stands on the trias. I say denuded since, within a distance of 10 miles from Oviedo, in a northerly direction, there are several sections of the cretaceous opened up by a road cutting bearing unbounded testimony to the fact that the whole district would have formed a portion of the cretaceous seas in their time, and still further north—*i.e.*, in the coast line to the east of Gijon—there is like evidence of the jurassic formation. More of that, however, on a future occasion. On the south of the plain above mentioned there lies an extensive range of mountains forming stirrups of the cantabrican portion of the Pyrenees, comprised principally of carboniferous limestone, many of the hills or heights forming this range are bare, rugged, and denuded, whilst others are covered with chestnut groves, having trees of an immense bulk and vast age, and here and there cultivated to their very summits. In traversing the valleys and ravines lying between these hills, we meet thick beds of shale with interlying seams or beds of coal of 2 to 9 ft. in thickness; this district constitutes the Austrian coal field proper. The coal is readily workable from its crop inwards. The dip is at an angle of 43° to 45°, and the accidentated surface of the ground permits a large quantity being worked by gallery; in fact, in the whole field, no coal has yet been touched at a lower level than the beds of the streams, that course down the valleys and ravines to fall afterwards into the Nalon.

I have carefully examined one of the properties in the very best positions in the district. This is called La Moral; a gallery driven into the side of the hill would cut 15 seams of good steam and gas coal, averaging in width from 2 metres to 70 centimetres, and consequently all workable, and a shaft sunk to a depth of 100 metres, at a spot distant 100 metres from the mouth of the said gallery, would cut 16 workable seams of coal. Although it is, to a certain extent, turning aside from our journey to enter into the above and other details respecting this field, still once that I have mentioned it, it may as well be glanced at.

In 1878 about 500,000 tons were extracted from this field, of which 100,000 tons were shipped at Gijon for other ports in Spain, in ships engaged in the coasting trade, the remainder being consumed in the iron manufactories of Mieres, La Zelguera, and Quiros, as well as in the National Ordnance Factory of Trubia, the small arms factory of Oviedo, the zinc manufactory of Arnao, the glass works of Aviles and Gijon, the earthenware works at Gijon, the wire and Paris-points works, with its blast-furnace, puddling, and re-heating furnaces and trains, local railways and tramways, and in a large number of smaller but still important foundries and other industries.

The extent of the carboniferous formation in Asturias is, according to Schultz, 270,000 hectares, or 667,194·30 English acres, whereof 60,000 or 152,265·40 English acres are situated in the district under notice. As already noted, the seams are heavily inclined, but the accidentated form of the surface (caused by heavy denudation by stream and river, opening up deep valleys between one elevation and another) allows natural means of drainage, enabling the miners to work in rather an original manner at a minimum of cost down to where natural drainage fails, when they generally leave off, and begin anew in some other part of their possessions. There are, of course, some exceptions to this rule in the district; but it may be practically asserted that the coal below the natural drainage line throughout the district has not yet been touched. The coal produced in most of the mines is of excellent quality, and may be classed as steam, locomotive, house, coking, and gas coals; there are thin seams of excellent Cannel coal in some of the mines. I have some specimens of this, having the wavy, compact appearance of jet, and which could readily be mistaken for this latter mineral. It is not generally known in England that good coking coals exist in Asturias, such however is the case. The Mieres Ironworks have constantly distilling 70 Belgian ovens, and 60 ovens designed and constructed on his own system by the very intelligent manager, D. Geronimo Ibran. These ovens produce the coke necessary for the supply of two blast-furnaces, a coke as hard and silvery as was ever produced at Marley Hill. Each takes a charge of small washed coal weighing, for the Belgian ovens, about 2½ tons, these ovens producing an average of 62 per cent. of the coal charged, whilst those of Mr. Ibran take a charge of 3 tons, and produce 70 per cent. coke for the coal charged—the time occupied in the coking being the same in both cases—*i.e.*, 48 hours. The very abundance of the output and the low cost at which working is being carred on has to the present allowed the miners to be very careless as well as extravagant in the saving and dressing of the small coal; washing is throughout effected by buddles, and the fine small or schlams is allowed to float away in the streams and rivers. There is of course great waste, and many of the miners take no heed of the smalls, but tip them away with the rubbish. The accompanying rocks are shales, heavily charged with bitumen and other hydro-carbons. There are attle heaps comprised of hundreds of thousands of tons of shale and small coal, whose owners would only be too glad to see them utilised in one way or another. The excessive import dues upon petroleum, paraffin, aniline dyes, &c. would allow an enormous profit for the distillation of these tips. The natives of this and the surrounding districts know nothing of this; they suppose that when once the rubbish is tipped away it has been done with. Perhaps some of your readers may feel interested in this line. In that case I shall be pleased to give further details J. A. JONES.

Mieres, June 9.

MINING NOTES AND RECOMMENDATIONS—No. I.

SIR,—The history of mining is closely interwoven with that of our country, and as an industry it must ever be counted the first of the many industries which have made us the premier commercial nation of the earth. But although so much of our greatness and wealth is due to mining, the public generally are associated with it to a comparatively small extent, owing doubtless to the limited knowledge which obtains. There are few who look upon mining in the same light as other investments are viewed by the ordinary investor. Every investment demands thought and attention and unless at least the same consideration is given to mining it cannot be expected that results will be satisfactory. As opportunities are greater for making money more rapidly in this class of security than is found in others, and the liability to loss, perhaps, greater, it must be seen that greater care is demanded instead of a lesser, which is usually given. The world's wealth—its gold and silver—has been won from the rocks. From the beginning men have been employed toiling in the bowels of the earth to win the treasures, which to-day are as the wheels of commerce. The 1,400,000,000*l.* which the world holds in its lap to-day is the medium by which it makes interchange for the necessities and luxuries of life. But while we can estimate the power of the precious metals the value of the baser metals is almost incalculable: in their usefulness they are so. The influence of mining is universal; trade and commerce flows and declines as it flourishes or diminishes, and nations progress or fall back. Its importance at home can be seen by the value of the minerals and metals which are annually raised, and what is going on here is also going on throughout the world. It is the pioneer of civilisation; is not England an example, to say nothing of the great mining countries on the American continent, or of our colonies? From the time the prospector's hammer first rings on the mountain side to the time when bullion is turned out by the ton, the wave of civilisation gathers strength, and in the venturesome steps of the miner there follows the agriculturist, the tradesman, and merchant, and cities rise where before the footprints of the savage even were rarely seen. All this is not accomplished without risk and loss, not only of money, but life itself; but to turn aside from mining because of failures is just as unreasonable as it would be to leave the ordinary pursuits of life for the same cause. Whatever the circumstances which have brought ruin to many enterprises in no way detract from mining as a profitable investment. Risks are unavoidable as in everything else; but all that is possible is done to reduce them to a minimum. Inexperienced and unprincipled men have lauded worthless concerns and pushed them into the hands of the credulous and unwary investor, doing the greatest possible mischief. I shall endeavour in these notes, based on long experience, to make mining investments plain, and I trust that the observations will prove serviceable.

Industry and intelligence are the keystones of success in mining but while knowledge promotes and carries on enterprises, practical acquaintance from long experience is a guard. Commonly we speak of mining as a chance, but since we have the experience, and science has lent her aid, it has become sound and profitable.

In approaching these investments the first consideration is a proper selection; this should be done with the greatest care. To make a good selection the capitalist requires the knowledge. He may possess it himself or obtain it at the hands of another. There are those engaged in this department of commerce who are constantly watching the markets, and the progress made by the numerous mines before the public. Opinions are gathered from the best sources, and these are well weighed and reasoned out before advice is given. This is the business, and if such men are not able to advise, who then can? The public want and demand honest opinions, and never before, perhaps, were they more needed than to-day, for rotten concerns have most unblushingly been submitted and eagerly subscribed to by the credulous. There has been nothing to recommend the schemes but the loud puffs of promoters; the prices asked for the mines being excessive in the extreme. Many mines have been introduced which never had the symptom of success, and, what is worse, were never intended to succeed; therefore, the best judgment is required to discriminate aright.

There are two classes of mines—dividend and non-dividend, or progressive mines as they are sometimes called. Dividends are not always to be depended upon as an indication of real worth. Large and regular dividends may have been made, and then a sudden falling off may occur, and so, on the contrary, a mine may just be budding into the Dividend List, and a healthy and prosperous future be before it. The latter class of mines are the greater favourites with almost every mining capitalist. The shares frequently stand at low prices, and in some cases are practically ignored; but in the event of a discovery, improvement, or from some other cause, such as the introduction of economical machinery, there is some scope for a rise in the price, and in proportion to the affecting cause so we get the advance. The increased value thus brought about amply repays the investor should he elect to take advantage of the market; the profits thus made being equal oftentimes from 100 to 1000 per cent. Another consideration in the selection of mines is the nature of the metals produced, the district in which the mine is situated, the facilities for carriage, water, and fuel, the richness of the lodes to be worked, the capacity for haulage, handling the ores, and also the state of the metal market. If success is to be obtained all these matters will have to be watched, and as changes are constantly taking place the attention will have to be persistent. To approach mining rashly is positive ruin, but if only proper care is observed then it must repay, and that handsomely, the attention given it. A mine, like other things, has a beginning, which is called its promotion. After the selection has been made it is well, if not absolutely necessary in some cases to make a thorough investigation of the promotion, if of recent date. When a company has been established for some years such investigation could be of little purpose. A glance at the origin of a company gives the condition under which it was introduced to the public; it may have been floated under most favourable conditions, or it may have been little better than a fraud. The large amounts sometimes paid for properties is capitalised, and becomes a burden. Whatever is paid to the vendor has to come from the public, and when excessively high prices have been taken for properties the pressure on the productive capital which may be in hand is consequently greatly increased. E. R. GABBOTT.

Austin Friars, June 20.

PATENT FUEL (BRIQUETTE) MANUFACTURE IN FRANCE.

SIR,—A new method in the manufacture of coal briquettes has been adopted at some of the collieries which I have recently visited in Westphalia. The cost of one of the machines, with buildings, rotary furnace, ladders, engine, boilers, and all other necessary appliances is about 3500*l.* The amount of fuel used in the operation is 2½ per cent. of the production (spoilt briquettes are utilised for this purpose), and the cost of making 1 ton of this patent fuel is 6s. The price of the coal used is reckoned at the rate of 4s. per ton, and the coal tar at the rate of 24s. per ton.

The process, which is a very simple one, differs from other systems, inasmuch as the mill is of double pressure. The tar is mixed at the rate of 5 per cent. of the coal used. The latter is put into a hopper with the tar, and taken by means of a jacob's ladder into a disintegrator, where the proper mixture is obtained, and then raised by the same process to a heating furnace, consisting of a revolving round iron plate, upon which the material falls in the centre, and gradually passes on to the circumference, and is caught there by an endless screw, and taken on to the press mill, which subjects the stuff from two sides to a pressure of 180 atmospheres, after which it is forced out in brick shape. The weight of the bricks made are 3, 5, and 10 kilogrammes.—*London, June 18.* T. K. P.

MANAGEMENT OF MINES.

SIR,—To attain success the paramount importance of economy in mining under the direction of an efficient manager has been so constantly urged in the columns of the *Mining Journal* that, as a subscriber, I take the liberty of applying for advice in the following matter:—I represent the owners of a private quartz gold mine in Central America. Under the personal supervision and direction of one of the owners (an able and practical prospector) most thorough and complete prospecting works have been carried on for three years, during which period cuttings have been made, shafts sunk to a depth of 100 ft., adit tunnels run, and all available tests applied to prove the character and permanence of the lode. Finally the mine has been visited and inspected by the skilled superintendent of other mines in the country. His opinion and the result of all the prospecting operations being favourable, the owners have decided to erect machinery and work the mine, and have applied to me for an efficient, skilful, reliable, and economical trained mine manager or superintendent who has had experience of quartz gold mining, and the treatment of ore to the best advantage.

The owners intend to put up a 10-stamp battery at once, and to increase the number of stamps as the work progresses, and the ore supply is opened up. Economical working is of first importance, and the owners will pay no extravagant salaries, but will agree to whatever is reasonable for the services of a really efficient and trustworthy manager, and prefer that a portion of his remuneration should be in the shape of a percentage on profits in addition to a fixed salary. No writer of glowing reports would be useful, but an able and practical manager. If he knows Spanish so much the better; but the question is how could such a man be found, and what should he be paid?—*Liverpool, June 19.* E. X. D.

OWEN VEAN AND TREGURTHA DOWNS—EAST UNY.

SIR,—A few days ago I left Paddington by the quarter before noon train, and being up to time arrived at Truro 35 minutes past seven, doing the 300¼ miles in 7 hours 50 minutes. I have often heard people who have travelled a little become enraptured in describing the fertility and beauty of foreign countries; but I have visited almost every great mining centre in the world, and I frankly confess I have never seen anything to equal England in its present state. From Paddington to Penzance the train dashes through scenery so varied, interesting, and beautiful that it requires the pen of the poet to do it even partial justice. In nearing the far west the beauty of the scenery seems only to be equalled by the purity of the atmosphere, which is so exhilirating after the din and smoke of London that a person becomes almost intoxicated with delight; dyspepsia disappears, and impaired appetites return with marvellous rapidity; and I guarantee that a week in the West does more good to the over-taxed City man than all the nostrums in Europe. I am surprised that the health-restoring qualities of the county of Cornwall are not more generally known. I strongly recommend any person requiring a little relaxation from business to spend a fortnight or a month in West Cornwall, and they will have no cause to regret it.

The third day after my arrival in Cornwall I visited the Owen Vean and Tregurtha Downs Mines, which are situated a short distance from Marazion and St. Michael's Mount. When I visited these mines only a few months ago there was little to be seen save a few old mine burrows (heaps of mine debris) which had been deposited there by the ancients, and overgrown with stunted heath; the whole place had a deserted appearance, and was as quiet as a graveyard. But the scene has now changed and become vitalised—new smiths' and carpenters' shops have been built, and are full of busy workmen. One of the most beautiful 80-in. cylinder engines in England, erected by Messrs. Loam and Son, pumps the water out of the mines with

the greatest ease. Other kinds of machinery are being erected, and at stated hours scores of stalwart miners descend into the mines, and after working incessantly for eight hours emerge in appearance like "bundles of muddy rags." I noticed that most of the miners took a deep interest in the welfare of the mine, and that there was scarcely a man who did not bring up either a sample of tin or copper ore in his pocket. I examined one sample of the latter which would yield from 30 to 40 per cent. of pure copper. I also noticed some lumps of what appeared like pure arsenical pyrites, which on being calcined produced tin in highly remunerative quantities. Tin in a variety of forms is being found in various parts of the property in paying quantities, and at a point much nearer the surface than was anticipated by the present company, thus amply corroborating the reports of the ancients as to the great value of this run of mines. The Owen Vean and Tregurtha Downs Company are doing well, and getting full value for their money, and if they continue in well doing, and provide ample funds for the purpose of completing the object for which the company was formed, I believe they will have a good dividend-paying mine.

After leaving Marazion I spent a few days with my dear old father, listening to his description of the mines and miners of the Gwennap and Redruth districts, with which he was fully acquainted more than 60 years ago, and if his description of the miners who worked when he was a boy is correct, "there were certainly giants in those days." However, he has a wonderful knowledge of many of the abandoned mines in the neighbourhood, and points to several that would pay good dividends if properly opened. I gained from him a lot of valuable information with regard to some mines in comparatively virgin ground, which are capable of paying dividends with a small outlay, and which I hope some day to be able to turn to profitable account to myself and the locality in which they are situated. While at Redruth I heard a great deal of quiet talk about a comparatively new mine called East Uny, and through the courtesy of our family doctor, who also takes a deep interest in mining matters, I had an opportunity of visiting the property, which is situated only a short distance south of the town of Redruth. Its relative position with the notoriously rich mines of the district leaves nothing to be desired on that point, and the natural configuration of the ground is analagous to the leading dividend-paying mines of the county. The East Uny property contains eight lodes—the South lode, Wentworth lode, Julia lode, Mary Ann lode, Clijah lode, Copper lode, Davis lode, and the Great Flat lode. Seven of these lodes have been cut through, but only two have been even partially developed. All the others are standing entire from the point where they have been discovered in the 80 fm. level cross-cut to the surface. All the lodes have been more or less productive further west.

The immediate operations are being carried on on Davis's lode principally at the 80 fm. level, and they have already driven over or through a run of copper ore fully 180 ft. in length, the lode varying throughout from 4 to 7 ft. broad. The ore is of superior quality, and the nice parcels at surface ready for the market, and the good solid lumps that are hauled out of the mine daily ought to gladden the hearts of the shareholders. The 90 fm. level is being driven by an extra complement of men so as to reach the rich run of copper ore as soon as possible; and judging from the indications in the extreme end of the tunnel they are evidently not far off, showing very plainly to my mind that the rich run of copper is lengthening in depth. They are also raising some fair quality tinstuff, which in the absence of a steam stamps of their own they sell in its crude state to tin buyers at a profit. The prospects of this mine are certainly good, and in a short time they ought to be paying expenses, with a fair prospect of early dividends. I visited some other mines, but the prospects in my opinion were not bright, consequently I cannot refer to them. I had to return to London much sooner than I intended; nevertheless, I feel all the better for a week in the West, and I advise all those who can spare the time to "go and do likewise."

Gunnersbury, June 16. THOS. COLLINGWOOD KITTO.

REGISTRATION OF SHARES.

SIR,—With all due deference to the West Kitty management permit me to state that their new rules, reported in last week's Journal, though proper, are incomplete and fail to meet all the cases. An audit which leaves the detection of delinquencies to accident not only gives the delinquent a chance to escape and delays justice, but bolsters up the pseudo-credit of the operator, and extends the opportunity for further mischief. To obtain a complete check on the share register, and expedite the discovery of delinquencies in a practicable way, allow me to suggest a fourth rule for the consideration of Cost-book mine shareholders—that each shareholder be required to forward to the auditor (or committee of management?) in the beginning of January, May, and September of each year (or quarterly, beginning in either case according to arrangement) a written statement of the number of shares claimed by such holder; and in the case of omission on the part of any shareholder the committee (or auditor, as preferred) shall immediately advice said holder of the fact. After all there still remains the advisableness of the share certificate form-book being in the sole possession of the committee, or that each certificate issued should bear the signatures of two of the committee on their being satisfied of the need therefor.

Kirkaldy, June 18. TRADE.

SILVER HILL MINING COMPANY.

[ADVERTISEMENT.]

SIR,—I am instructed by one of the former directors of the Silver Hill Mining Company to ask shareholders to communicate with me on the subject of the company's affairs. If a sufficient number will do this, a meeting will be called and an endeavour made to resuscitate the company, which ought never to have been allowed to go into liquidation. A new company, with a smaller capital and inexpensive management, would pay, and pay well, according to the reports made by experienced and practical mining engineers who lately inspected the property (Messrs. Rickard Brothers, of London-street), whose reports will be laid before the meeting.

98, *Bishopsgate-street, June* 24. GEO. R. STATHAM.

SILVER HILL MINING COMPANY.

SIR,—Referring to several communications in recent Journals I beg to state that this company was ordered to be wound-up on the petition of Mr. William Thornton, claiming to be a creditor thereof as the holder of a dishonoured promissory note of the company, and as being the holder also of 300 fully paid shares. The lease of the mine was mortgaged to the vendors under a resolution passed at a meeting of directors held on May 3, 1881, and the plant on the mine was sold over a month since by order of the registrar. Shareholders could not do better than to individually memorialise the registrar to examine all the directors regarding their statements about the share issue at the statutory meeting of June 2, 1881, and to consult as to the best means of regaining and re-working the property.

Kirkaldy, June 18. INVESTOR.

NEW TERRAS MINING COMPANY.

SIR,—In last week's Journal "Miner" refers to the dividends declared in the Terras Mine, and expresses a hope that the present company—the New Terras—would not make a dividend of the same kind as that referred to. "Miner" will, perhaps, pardon me for offering an explanation of these particular dividends.

The working of the Terras Mine originally was by contract, the full particulars of which I need not detail here. One of the conditions was that the profits, if any, on the current or working account upon the tin department should go to the shareholders by way of dividend. In a little over two years upwards of 7000*l.* worth of tin was realised and sold. The cost of getting and preparing amount to 5000*l.*, and 2000*l.* was paid to the shareholders as per agreement. The capital account was borne by the contractor, including over 7000*l.* worth of plant and machinery, together with opening up and laying out the mine.

It could not reasonably be expected that an entirely new undertaking, of little over two years' growth, should be fully self-sustaining, but that a profit on the current working was fairly and honestly made notwithstanding. I need not tell "Miner," whose cognomen indicates an acquaintance with matters, that the Terras presents a rare exception as regards returns and work accomplished in so short a space of time. Passing over all that has been said in favour of and to the prejudice of this property, I still hold to my original impression in its favour, and sincerely wish the present proprietors every success in their future operations. MARTIN RICKARD.

Roche, June 20.

NEW TERRAS TIN MINE.

SIR,—A friend of mine has kindly sent to me a circular, published by a London firm, the object of which (in part) appears to be to throw discredit on New Terras Mine as a subject for investment. To accomplish that object they speak of the committee with very little respect—if any—and make inaccurate statements as to the mine. The mine had not a lengthy trial, as stated; it worked only about two years, and in that time about 8000*l.* worth of tin ore was sold from it. The elvan is not poor; Capt. Rich, who has recently inspected it, says that the yield is 2½ per cent. of black tin on the average. Capt. Rickard, who was the agent under Mr. Martien, has given a very favourable report on the property, and so have several other respectable mine agents. The stamping apparatus, which is now under construction, will soon show the error of the allegations. They seem to think that, because I am 80 years of age, I am incompetent to act on a committee. I beg to state that I do not feel old age more than I did 50 years ago! You will not find a man of my age in London who feels old age less, or so little. I have a hand as steady as that of any youth, a memory unimpaired, and a knowledge of nearly all the mines in Cornwall. People say that I am "an extraordinary man," and I admit it with gratitude to the author of my life.—*Truro, June* 21. R. SYMONS.

EAST DEVON CONSOLS.

SIR,—I regret to see this young promising copper mine at a stand still for want of capital. I never knew a commercial undertaking reach so nearly to success and miss it for want of a few hundred pounds. There is no second opinion as to the value of the sett, which only requires a moderate amount of working capital to enable the proprietors to produce hundreds of thousands of pounds worth of ore.—*Buckfastleigh, June* 20. B. J.

CONWAY VALLEY COPPER MINE.

SIR,—Being at the town of Conway on Tuesday, and learning whilst there of the great improvement in the lode at the Conway Copper Mine, I took the opportunity to visit the mine, and I must say that I was very much pleased to see the orestuff on the surface that was broken the night before is pretty stones of copper as anyone can see. The resident agent told me that the lode had improved very much in the past day or so, which I firmly believe, for I met one of the Cornish miners that has worked for me in other mines, and he told me that the lode was very much improved, looking richer that day than he had ever seen it before, and there is no doubt in my mind that the Conway Copper Mine will make a rich mine as depth is obtained. WILLIAM BENNETTS.

Trefriw, June 21.

SHROPSHIRE LEAD MINES DISTRICT.

SIR,—We learn with great satisfaction that the South Roman Gravels sett is being taken in hand by a spirited party. The situation of the property is all that could be desired, being in the centre of the mines here, and adjoining the rich Roman Gravels, and the great Roman lode running into it; and the strata which bears the lead ore striking into it at a rapid rate of dip, and the new shaft started on the property near to the parish church at Shelve Village. They have every prospect of a good mine. MINER.

YORKSHIRE COLLEGE—PRACTICAL TECHNICAL TRAINING.

The thoroughly practical character of the course of instruction given in the Coal Mining Department of the Yorkshire College, at Leeds, has several times been referred to in the *Mining Journal*, and the usual three excursions to collieries which have this year been made show that interest in the matter is fully maintained. The first excursion was to the Ashton Moss Collieries, near Manchester. The pits there are the deepest in Great Britain, being over 2800 ft. deep, but the coal is worked without any unusual difficulty. After inspecting the underground workings, the party were hospitably entertained at lunch by Mr. Greenwood. The classes next visited the boiler-works of Messrs. Daniel Adamson and Co., where they saw the entire process of boiler-making, including the testing of the tensile strength of a steel plate by Mr. Adamson's testing machine. In the evening a visit was paid to the Electric and Gaslight Exhibition in Manchester.

The second excursion was, at the invitation of Messrs. Fletcher and Burrows, made to their extensive collieries at Atherton, in Lancashire. The students were kindly conducted by Mr. John Burrows, the mining engineer, and had the great advantage of an interesting and valuable explanation by that gentleman of the systems of working coal adopted at these collieries. The arrangements for ventilation, screening, and propping and barring the roads were also carefully inspected. The third excursion was to the Aldwarke Main Collieries, near Rotherham, by the kind invitation of Mr. C. E. Rhodes, the manager. These are some of the most exrensive collieries in Yorkshire, and a very large tonnage is raised. Mr. Rhodes conducted the party down the pit, and the students had the advantage of seeing the most excellent and complete arrangements for securing the safety and economy of the mine, which are, perhaps, unsurpassed. Mr. Rhodes's system of working the coal, the speed of winding, and the method of balancing the weight of rope excited great interest.

PROVINCIAL STOCK AND SHARE MARKETS.

CORNISH MINE SHARE MARKET.—Mr. S. J. DAVEY, mine share-dealer, Redruth (June 21), writes:—South Frances, Wheal Agar, and Dolcoath have been more in demand in our market this week, but there has not been much business done. At East Pool on Monday a dividend of 1*l.* per share was declared. Closing quotations herewith:—Blue Hills, ½ to ¾; Carn Brea, 7⅛ to 7¾; Cook's Kitchen, 30 to 31; Dolcoath, 57 to 58; East Blue Hills, 5s. to 7s. 6d.; East Pool, 43 to 43½; Killifreth, 2⅝ to 2¾; New Cook's Kitchen, 5 to 5⅛; New Kitty, 2 to 2¼; Penhalls, ¾ to ⅞; Pedn-an-drea, ⅞ to 1⅛; South Condurrow, 8 to 8⅛; South Penstruthal, 1⅛ to 1⅜; South Crofty, 7½ to 8; South Tolcarne, 4½ to 5⅛; South Wheal Frances, 9 to 9⅝; Tincroft, 7½ to 8; Trevaunance, 2½ to 3; West Basset, 5⅛ to 6; West Frances, 2 to 4; West Kitty, 13 to 13⅛; West Peevor, 5 to 5⅛; West Polbreen, 1¼ to 1½; West Poldice, 1 to 1¼; West Seton, 14 to 15; Wheal Agar, 16 to 16⅛; Wheal Basset, 5½ to 6; Wheal Grenville, 6 to 6⅛; Wheal Peevor, 4½ to 5; Wheal Kitty (St. Agnes), 1⅜ to 1½; Wheal Uny, 3 to 3⅛; Wheal Coates, 4s. to 6s.; West Tolgus, 11 to 13.

— Messrs. ABBOTT and WICKETT, stock and share brokers, Redruth (June 21), write:—Business continues very limited, and at present there is not much disposition apparent to buy or sell. At East Pool a dividend of 20s. was declared and a good report presented. Subjoined are the closing quotations:—Blue Hills, ¾ to 1; Camborne Vean, ⅛ to ¼; Carn Brea, 7⅝ to 8; Cook's Kitchen, 30½ to 31; Dolcoath, 57 to 57⅛; East Pool, 43 to 43⅛; Killifreth, 2⅝ to 2¾; New Cook's Kitchen, 5 to 5⅛; New Kitty, 2 to 2¼; New Trumpet, 1 to 1⅛; Pedn-an-drea, 1 to 1¼; South Condurrow, 8¼ to 8⅜; South Crofty, 7¾ to 8; South Frances, 9⅛ to 9⅜; Tincroft, 7½ to 8; West Basset, 5⅝ to 5⅞; West Kitty, 13 to 13½; West Peevor, 4 to 5; West Frances, 4 to 5; West Tolgus, 10 to 12; West Seton, 15 to 16; Wheal Agar, 15¾ to 16⅛; Wheal Basset, 5¼ to 5½; Wheal Grenville, 6½ to 6¾; Wheal Kitty, 1⅛ to 1⅜; Wheal Peevor, 4 to 5; Wheal Uny, 3¼ to 3¾.

— Mr. M. W. BAWDEN, Liskeard (June 21), writes:—The mining market has shown a steady improvement throughout the week with buyers of most dividend and progressive stock at present low prices, it being supposed by the initiative that tin has seen its lowest, with the probability of advanced rates being shortly obtainable. Killifreth, Phœnix United, South Caradon, South Frances, West Basset, Wheal Agar, Wheal Grenville, and Wheal Uny has been chiefly dealt in. Subjoined are the closing quotations:—Bedford United, 1½ to 1¾; Carn Brea, 7⅛ to 7⅛; Cook's Kitchen, 29⅝ to 30; Dolcoath, 56 to 56½; Devon Consols, 3⅞ to 4; Devon Great United, 1s. to 1s. 6d.; East Caradon, ¾ to ⅞; East Lovell, ½ to ¾; East Pool, 42½ to 43, x. d.; Gawton United, ⅛ to ¼; Glasgow Caradon, ⅜ to ½; Gunnislake (Clitters), 1¾ to 1¼; Herodsfoot, ¼ to ⅜; Hingston Down, ⅛ to ¼; Killifreth, 2⅝ to 2¾; Marke Valley, 1 to 1¼; New West Caradon, ¼ to ⅜; North Herodsfoot, ¼ to ¾; Old Gunnislake, ¼ to ⅜; Pedn-an-drea, 1¼ to 1½; Phœnix United, 2⅞ to 3; Prince of Wales, ¼ to ⅜; South Caradon, ¼ to ⅜, pm.; South Condurrow, 8¼ to 8½; South Crofty, 8 to 8¼; South Devon United, ⅜ to ½; South Frances, 9¼ to 9⅝; Tincroft, 7¼ to 7½; St. Just United, 6 to 6⅛; West Basset, 5¼ to 6; West Caradon, ⅝ to ¾; West Kitty, 13 to 13¼; West Mary Ann, ⅛ to ⅜; West Phœnix, ⅛ to ⅜; Wheal Agar, 15¾ to 16; Wheal Basset, 6 to 6¼; Wheal Crebor, 2½ to 2⅝; Wheal Grenville, 6¼ to 6⅝; Wheal Hony and Trelawny, 1⅝ to 1¼; Wheal Kitty, 1¾ to 1⅞; Wheal Jane, 1 to 1⅛, c. p.; Wheal Peevor, 4 to 4¼; Wheal Uny, 3¾ to 4

— Mr. JOHN CARTER, mine sharedealer, Camborne (June 21), writes:—I have again to report a very quiet week in the share market, and there is scarcely any change to notice. Wheal Agars have improved to 16, 16¼. Subjoined are the quotations:—Carn Brea, 7⅛ to 7¾; Cook's Kitchen, 29½ to 30⅛; Dolcoath, 56½ to 57; East Pool, 42⅝ to 43½; Killifreth, 2⅝ to 2⅞; Mellanear, 3 to 4; New Cook's Kitchen, 4¾ to 5¼; New Kitty, 2⅝ to 2¾; Pedn-an-drea, 1 to 1⅛; South Condurrow, 8 to 8⅛; South Crofty, 8 to 8⅛; South Frances, 9 to 9¼; Tincroft, 7¾ to 7¼; West Basset, 5⅛ to 5¾; West Frances, 3 to 3½; West Kitty, 13 to 13¼; West Peevor, 4 to 5; West Poldice, 1 to 1½; West Seton, 10 to 15; Wheal Agar, 16 to 16¼; Wheal Basset, 5¾ to 5½; Wheal Grenville, 6 to 6⅛; Wheal Kitty, 1⅛ to 1¼; Wheal Peevor, 3½ to 4½; Wheal Uny, 3¼ to 3½.

MANCHESTER.—Messrs. JOSEPH R. and W. P. BAINES, share-brokers, Queen's Chambers, Market-street (June 21) write:—In the principal markets we have to report not only a check to the upward movement noticed last week, but a reversal with lower figures for most prominent stocks, at any rate if not quotably much under last week's prices a distinct falling off from best points touched. The weather during some days has been very cold, and this may to some extent account for the decline in the demand, which has resulted in making lower values pretty general. In the minor markets the aggregate of transactions is greater than for some weeks past, but the number is swelled by several solitary dealings in shares which have not attracted much attention, and hardly evinces a distinctly better feeling or more doing, for, on the whole, business is very slow indeed. The instances of revision of quotations are fairly numerous, and generally balance is pretty well preserved.

BANKS lose none of their firmness as a class. The only case in which any decline is recorded is in National Provincial new, which are ⅛ lower; whilst Liverpool Commercial, Manchester and County, and Manchester and Salford each quoted ¼ better. Though otherwise unchanged, the buyers' figure for Manchester and Liverpool District is ⅛ higher.

INSURANCE shares have produced a few dealings, in number about an average of the past few weeks, and at prices calling for no special remark. The balance of movement in prices is a better record than of late, the majority of actual changes being favourable. One-sided alterations are made in Lancashire and in Thames and Mersey Marine, buyers of former quoting ⅛, and sellers of latter ⅛ down.—Higher: Royal Liverpool, ⅛; Liverpool and London and Globe, ¼ to ⅜; Queen, ⅛ to 3/16; and Mersey Underwriters, 1/16.—Lower: British and Foreign Marine and Globe Marine ¼ each.

COAL, IRON, &C., AND MINING.—Though prices again show a majority of adverse changes as regards number, rather more dealings are reported than of late, and where business has been done fairly steady figures are marked as obtained. Bolckows have moved somewhat irregularly, the fully paid being rather better, while the 12*l.* paid quote a little lower. Parkgate Iron are again marked higher, whilst Ashbury Carriage, Palmer's Shipbuilding B, and Tharsis Sulphur, &c., are put down. Ebbw Vales have changed hands to-day only, and price is unaltered, save an advance of ⅛ in buyers' offers, though they have shown quotable improvement during the week.—Higher: Parkgate Iron, 1½; John Brown and Co., ⅜; Bolckows, fully paid, ⅛ to ⅛; Patent Nut and Bolt, ¼; Indian Glenrock Gold, 1/16; and Indian Phœnix Gold, 1/16.—Lower: Ashbury Railway Carriage and Iron, 1; Palmer's Shipbuilding, B, ¼; Pelsall Coal and Iron, ⅛; Tharsis Sulphur and Copper, ⅛ to ⅜; Sheepbridge Coal, &c., ⅛ to ⅜; Charles Cammells, ¼; Chillington Iron, 1/16 to ⅛; and Bolckows, 12*l.* paid, ⅛.

COTTON SPINNING, &C.—Market keeps fairly steady for the shares of most concerns; full prices rule for favourite companies, but for a few outside the ordinary run of business figures are rather nomiual. The demand continues, but is not sufficiently decided to cause a quotable all round advance. Holders being rather independent and averse to concession makes the sum of transactions but meagre.

TELEGRAPHS.—Only a few solitary dealings marked. Quotations for Globe Telegraph and Trust Ordinary are ⅛ to ¼, and West India and Panama ⅛ to ¼ higher; but Anglo Ordinary are ⅛; ditto, Deferred, ⅛; ditto, Preferred, 1; and Globe Preference, ⅛ lower.

TELEPHONES.—Lancashires and Cheshires have been done a few times at slowly advancing figures, and quote 1/16 up on the week. United, after being put down, have recovered, and now quote same as a week ago—those comprising the changes marked.——CANALS where altered are better, Rochdale being 1, and Bridgewater, 1/16 higher. A solitary transaction in each of these is all the business reported.——CORPORATION STOCKS, &c., are a little irregular, but on the whole quite firm. Bradford Corporation Debentures are ⅛ up, and Manchester Corporation Stock ⅛ down.——MISCELLANEOUS.—Shares have produced a few transactions and several changes in price. Hudson Bays are lower, as also are Manchester Carriages and Trams of all issues. Milner's Safes and Brush Electric Lights, on the other hand, are higher.

RAILWAYS.—The improvement in prices recorded last week has in several instances been lost, the volume of business having fallen off, and values drooped in consequence. There has, however, been a good trade done in Deferred Stocks, and up to yesterdhy prices for these showed advances; but they relapsed, and lost ground, weakening to the extent of 1 to 3½. Scotch Stocks are steady, North British being the firmest, and Chathams exhibit a distinct gain from last week, the weather in their neighbourhood having given hopes of good hops and fruit crops. Canadians have shown a scarcity of stock, and this helped their value; but, although returning an increase of traffic of 8734*l.*, they have gone down and close dull. Americans have again lost vitality; there is a dubious feeling on this side, and speculation is at a low ebb.

SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

STIRLING.—Mr. J. GRANT MACLEAN, sharebroker and ironbroker (June 21), writes:—During the past week the market has been firm, owing to the easy state of the Money Market, the favourable crop prospects, and fewer sellers. The long-continued dulness appears to have made the market sounder, and trade prospects are more hopeful, so that prices may still improve.

In shares of coal, iron, and steel companies business continues quiet, in sympathy with the pig-iron market. Cardiff and Swansea are at 45s. to 55s.; Darlington Iron, 57s. 6d.; Llynvi and Tondu Preference, 57s. 6d. to 62s. 6d. Marbellas declined from 99s. to 92s., on adverse rumours, for which there is stated to be no foundation, but are now about 93s. 6d. Rhymney Iron (new), 3s. 9d. to 6s. 3d.; and Tredegar, A, 6 to 7.

In shares of copper concerns prices are steady. The principal business has been in Tharsis, which declined from 7*l.* 1s. 6d. to 6*l.* 12s., owing to a denial that the new sulphur recovery process has turned out a failure, although it is admitted it has been given up in the meantime. Bratsbergs are at 40s. to 45s.; Mason and Barry, 14¾ to 15.

In shares of home mines business is quiet. Glasgow Caradons touched 10s. but recovered to 12s. on issue of a circular showing more favourable prospects for this year. Some rich stones of grey ore have been discovered in the new lode of Gunnislake (Clitters); should this prove the forerunner of a deposit the shares might rise to about 8*l.*, as they did some years ago. The report of the York and Lancaster Mines shows that a satisfactory amount of new capital has been obtained; the water is being kept down, and by the end of the current year the opening out of the mines will be completed, and the returns of ore ascertained. Aberduna are at 16s. Blue Hills, 10s. to 12s. 6d.; Caron, 2s.; Carn Camborne, 20s. to 25s.; Carnarvonshire Great Consols, 10s. to 15s.; Devon Friendship, 3s. 9d. to 5s.; East Hony, 15s.; East Devon Consols, 10s. to 15s.; East Blue Hills, 6s. to 8s.; East Caradon, 12s. 6d. to 15s.; Gorsedd and Merllyn 27s. 6d.; Goginan, 10s. to 15s.; Goodevere, 7s. 6d. to 10s.; Great Wheal Worthy, 5s. to 10s.; Herodsfoot, 5s. to 7s.; Killifreth, 50s. to 55s.; Monkston Manganese, 10s. to 15s.; Marke Valley, 15s. to 20s.; North Grogwinion, 2s. 6d. to 5s.; North Busy, 5s. to 7s. 6d.; Old Shepherds, 10s. to 12s.; Old Gunnislake, 5s. to 7s. 6d.; Pednandrea, 17s. 6d.; South Crebor, 2s.; Sortridge, 2s. to 3s.; South D'Eresby, 1s. 6d.; Silver Hills, 2s. 6d. to 5s.; Tamar, 10s. to 12s. 6d.; Tresavean, 10s. to 12s.; Tregontrees, 10s. to 15s.; United Van Consols, 7s. 6d. to 12s. 6d.; West Holway, 10s. to 15s.; West Frances, 60s. to 70s.; West Caradon, 12s. 6d. to 17s. 6d.; West Wye Valley, 2s. 6d.; Wheal Comford, 12s. 6d. to 17s. 6d.; Wheal Crebor, 50s. to 55s.; Wheal Hony, 20s. to 25s.; and Ystwith, 1s. to 3s.

In shares of gold and silver mines there has not been much business doing. South-East Wynaad and Emmas have been in speculative favour. Organos Debentures offered. Asia Minor are at 2s. 3d.; California, 18s. 9d. to 21s. 3d.; Cankim Bamoo, 5s. to 7s. 6d.; Colar, 7s. 6d. to 12s. 6d.; Consolidated, 2s. 3d.; Flagstaff, 2s. 6d. to 3s. 9d.; Gold of Canada, 2s. 6d. to 3s. 9d.; Indian Kingston, 1s.; Indian Glenrock, 2s. 6d. to 5s.; Indian Phœnix, 2s. 6d. to 5s.; Kohinoors, 17s. to 18s.; Last Chance, 2s. 3d.; New Gold Run, 2s. 6d. to 5s.; Organos, 25s. to 30s.; (been 41s. 3d.); Silver Peak, 2s.; Tambracherry, 6s. to 7s.; South African Syndicate, 60s. to 70s.; Victoria, 12s. 6d. to 17s. 6d.; and West Frontino, 10s. to 15s.

In shares of oil and miscellaneous companies prices are steady. Oil shares are inclined to improve on the continued decrease in the American production, although the number of wells is increasing. The meeting of Young's Paraffin passed off favourably, but there are rumours of water affecting Midlothian again. Lawes' Chemical (pref.), 10½ to 10¾.

IRISH MINING AND MISCELLANEOUS COMPANIES SHARE MARKET.

CORK.—Messrs. J. H. CARROLL and SONS, stock and share brokers, South Mall (June 20), write:—Markets were firm to-day. Great Southerns were dealt in at 122 and Midlands at 90. No change in Great Northerns or Bandons. National Banks shares were bought at 25½. Provincials steady at 33, and Munsters at 7 1-16ths. Alliance Gas are 19⅛; Cork Packets, 11 15-16ths to 12; Gouldings, 9⅛ Lyons, 5⅜ to 5½. Levys were offered at 6, and Harbour Board Debentures at 100½.

CO-OPERATIVE TIN CRUSHING IN QUEENSLAND.—The tin deposits of Queensland continue to receive attention, and one company at least appears to be now ready to work on this principle. The directors of the Herberton Co-operative Tin Crushing Company held a meeting at Herberton, on April 7, at which it was stated that Mr. Baker had expressed his readiness if the company were prepared to crush at once to send to their mill 200 tons of stone, whereupon it was resolved that as soon as the 200 tons be carted to the mill crushing should be resumed. Mr. D. A. Mackintosh was appointed secretary, in place of Mr. George Gray, resigned.

Registration of New Companies.

The following joint-stock companies have been duly registered:—

THE PUBLIC WORKS AND CONTRACT COMPANY (Limited).—Capital 50,000*l.*, in shares of 50*l.* The business of general contractors in connection with railways, tramways, water or other works of any nature. The subscribers (who take one share each) are—A. L. Elborough, 2, Victoria Mansions; G. Egerton, Adelaide Buildings; T. Dermer, Croydon; W. H. Burrell, Adelaide Buildings; G. F. Bonner, Adelaide Buildings; J. T. Seymour, Kentish Town; F. H. Fletcher, Croydon.

The CITY OF ADEN IMPROVEMENTS AND GENERAL SYNDICATE (Limited).—Capital 5000*l.*, in shares of 100*l.* Objects similar to those of the foregoing company. The subscribers (who take one share each) are—J. T. Seymour, 11, Lawford-road; G. F. Bonner, Adelaide Buildings; G. E. Motion, Adelaide Buildings; D. T. Miller, Croydon; T. Floyd, 3, Victoria Mansions; T. Dermer, Croydon; W. Hunt, Croydon; A. Elborough, 2, Victoria Mansions.

THE RHONDDA CHEMICAL AND SOAP COMPANY (Limited).—Capital 20,000*l.*, in shares of 10*l.* To acquire the Rhondda Chemical Works, situated near Pontypridd, Glamorgan, and continue the business in connection therewith, The subscribers (who take one share each) are—E. Thomas, Pontypridd; H. Davies, Pontypridd; G. Hopkins, Cardiff; S. Fletcher, Cardiff; H. J. Wilshire, Pontypridd; F. G. Evans, Cardiff; T. Prothero, Pontypridd.

THE ISLAND STEAM SHIPPING COMPANY (Limited). — Capital 160,000*l.*, in shares of 25*l.* A shipowner's business in all branches. The subscribers (who take one share each) are—G. D. Tyser, 3, Crosby-square; G. W. Tyser, 3, Crosby-square; L. R. Erskine, 11, Warnford-court; J. Comervail, 39, Princes-square; F. Firbrace, 21, Suffolk-street; A. McGedrie, 29, Almington-street; W. H. Tyser, 3, Crosby-square.

THE CWMPARE SILICA BRICK COMPANY (Limited). — Capital 10,000*l.*, in shares of 10*l.* To carry on the trades of fire-brick and tile manufacturers, and dealers in silica, sandstone, plastic clay, white pipe-clay, &c. The subscribers (who take one share each) are—T. Ford, Swansea; J. H. James, Swansea; D. M. Jones, Swansea; E. S. Williams, Swansea; A. Mason, Swansea; A. H. Richardson, Swansea; G. B. Elkington, Burry Port.

THE TWIN LAKES HYDRAULIC GOLD MINING SYNDICATE (Limited).—Capital 50,000*l.*, in shares of 50*l.* Purchasing, acquiring, and working all or any of the tracts of gold-bearing gravel known as Cash Creek, the Morgan Claim, and the twin Lakes Placer Mine, situated in Lake County, near Leadville, Colorado, together with any lands, works, mills, machinery, appurtenances, &c., thereto belonging, and generally to carry on the business of gold miners, workers, manufacturers, buyers and sellers of gold or other metal, and of all ores or compounds thereof respectively. The subscribers (who take one share each) are—H. J. Coke, Rickmansworth, esquire; T. K. Weir, Gresham House, metal broker; F. F. Barry, Windsor, merchant; P. P. Gaskell, 31, South-street, J.P.; T. J. Bird, Liverpool, merchant; A. B. Cunningham, Palace Chambers, merchant; E. A. Barry, Windsor, student. Until the directors are appointed the subscribers will act as such. Future directors will have to qualify in 100*l.* of the share capital.

THE EKMAN PULP AND PAPER COMPANY (Limited).—Capital 250,000*l.*, in shares of 10*l.* Makers of and traders in, paper in connection certain with acquired patents. The subscribers (who take one share each) are—R. D. Balfour, 22, Threadneedle-street; A. J. Eden, 57½, Old Broad-street; T. M. Wequelin, 57½, Old Broad-street; A. Balfour, 57½, Old Broad-street; G. Fry, 57½, Old Broad-street; C. D. Ekman, 12, Fountain-court; E. P. Barton, 10 and 11, Aldersgate-street.

THE ARGENTA FALLS SILVER MINING COMPANY (Limited).—Capital 150,000*l.*, in shares of 1*l.* To purchase or otherwise acquire lands, estates, mines, and mineral properties in the United States of any tenure whatever, and in particular to purchase the interest of the present proprietors in certain mines and mineral properties situated in Lake mining district, county of Hindesdale, Colorado, known as the Belle of the West lode, the Extension lode, the Western Belle lode, the Minerva lode, and the Malter Placer, and generally to carry on the business of mineral mining proprietors and smelters, and to carry out that purpose to erect all works, plant, machinery, &c., necessary. The consideration of the sale is 130,000*l.*, whereof 10,000*l.* is payable in cash, the remainder in shares. The subscribers (who take one share each) are—R. S. Archbold, 9, New Broad-street, merchant; J. E. Cowan, 48, Gloster-street, gentleman; M. M. Moore, 83, Lombard-street, merchant; H. Fox, 28, St. Swithin's-lane, solicitor; E. Sweetland, Edgware, gentleman; G. T. Verney, 9, New Broad-street, clerk; J. M. Carey, Dalston, clerk. The following constitute the first board:—Messrs. Archbold, Cowan, Moore, Sweetland, and R. Ewing.

THE MERLIN CYCLE COMPANY (Limited).—Capital 25,000*l.*, in shares of 5*l.* Manufacturers, repairers of, and dealers in bicycles, trycicles, and other velocipedes, &c. The subscribers (who take one share each) are—T. Brenton, Richmond; R. Wills, Stroud Green; J. J, Kisdon, Richmond; A. E. Jarvis, 3, Guildhall Chambers; C. R. Wynne, Sydenham; T. J. W. Buckley, Teddington; R. W. Lethbridge, Clapham.

THE ALICANTE WATERWORKS (Limited).—Capital 120,000*l.*, in shares of 10*l.* To supply the town of Alicante and neighbourhood with a system of waterworks. The subscribers are—E. L. Marshall, 9, St. Helen's-place, 25; A. W. Ray, 52, Queen Victoria-street, 100; E. J. Evans, Canonbury, 100; A. D. Maclaren, 3, New-square, 20; A. Scott, 157, Leadenhall-street, 20; R. Marshall, 18, Moorgate, 100; J. W. Ellwood, 52, Queen Victoria-street, 1.

THE UNIVERSAL CARRYING AND WAREHOUSING COMPANY (Limited).—Capital 20,000*l.*, in shares of 25*l.* The general business of carriers, also of agents for railway companies and ship proprietors, as lightermen, warehousemen, &c. The subscribers are—J. G. Langham, Eastbourne, 4; J. R. Cleave, Eastbourne, 4; H. M. Spain, Eastbourne, 4; J. Hurst, Eastbourne, 4; C. E. Horne, Eastbourne, 4; A. Hormsom, Eastbourne, 2; W. Greenfield, Eastbourne, 2.

RIXON'S IRON AND BRICK COMPANY (Limited).—Capital 70,000*l.*, in shares of 10*l.* To acquire the premises, property, and goodwill situated in Wellingborough, and to carry on the business of miners, colliery proprietors, lime, fire-brick, and tile or pipe manufacturers, smelters, ironmasters, and ironfounders, &c. The subscribers (who take one share each) are—F. Bedford, R. Ashwell, Bedford; J. Hawkins, Bedford; G. S. Campbell, 2, Lady Somerset-road; W. G. Campbell, Highgate; J. Campbell, Highgate; J. M'Eachan, 5, Fenchurch-street.

THE SOUTH SWEDEN FOREST AND SAW MILL COMPANY (Limited).—Capital 20,000*l.*, in shares of 100*l.*. The business of sawmill proprietors, timber merchants, and lumberers, &c. The subscribers (who take one share ench) are—E. V. Jones, Welshpool; R. Owen, Welshpool; S. Carnaby, Liverpool; G. T. Bennett, Liverpool; W. Bromley, Chester; E. H. Jones, Welshpool; W. H. Preston, Liverpool.

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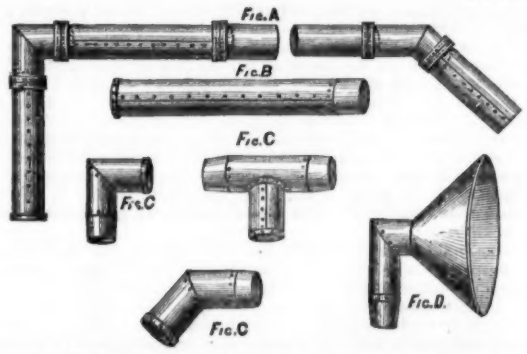

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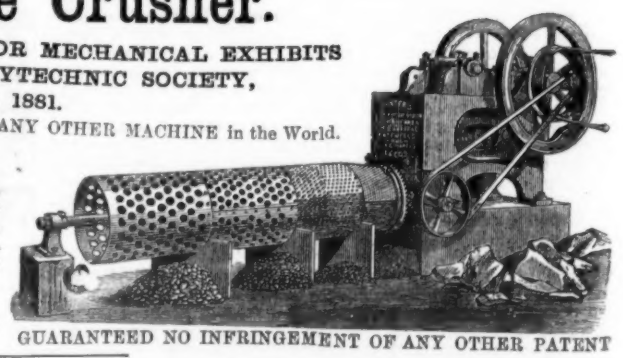
DEAR SIR,—I am pleased to be able to tell you that the Machine works splendidly. We are breaking 16 trucks a day now and we thought it a good day's work to do 10 a day with the old Machine, so you can see the difference. I had a gentleman looking at it yesterday, and he was surprised to see it work so easily. Yours truly, E. ORGAN.

The above refers to one of our 16 by 9 Machines we supplied to replace an "Improved Blake" 15 by 9 Machine.



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FOREIGN MINING AND METALLURGY.

Orders for iron continue to make default in the Nord (France) and attempts made to advance quotations have not been attended with success at present. A very similar report may be made with respect to the Paris market, upon which merchants' iron has made 7*l.* 4s. per ton, and No. 2 ordinary plates 9*l.* 4s. per ton. The question of forming a syndicate of forgemasters in the Nord is still under consideration, but no definitive results have been arrived at. The bulletin of the committee of French forgemasters gives an interesting table illustrating the consumption of rails during the last three years. It appears in 1882 this consumption amounted to 290,975 tons, as compared with 239,398 tons in 1881, and 208,553 tons in 1880. In last year's consumption the Northern of France Railway figured for 16,792 tons; the Eastern of France for 15,417 tons; the Western of France for 15,780 tons; the Paris, Lyons, and Mediterranean for 79,220 tons; the Orleans for 30,033 tons; and the Southern of France for 22,987 tons. The State lines took 22,966 tons, and certain lines constructed by the State 84,280 tons. In the aggregate consumption of each year iron rails figured for only 16,777 tons in 1880, 8064 tons in 1881, and 6939 tons in 1882. In consequence of the rupture of a syndicate formed some time since by German blast-furnace proprietors, quotations for pig have been irregular upon the German markets. In the Siegen district white pig has made only 2*l.* 14s. per ton, while Westphalian pig has receded to 2*l.* 8s. per ton, with little business doing at that price. The bad tone of quotations for pig has affected the German iron market generally, and considerable confusion must be said to prevail upon it. Bars have made 6*l.* 8s. per ton; merchants' iron, 7*l.* per ton; and boiler-plates 10*l.* 5s. per ton.

The condition of the Belgian iron trade is still very encouraging, and it is remarked that orders have become more numerous, and that the demand has shown more activity. The progress observable is not very marked at present, but the best symptoms of change in the general aspect of affairs are, of course, carefully noted. It is still with some difficulty that prices are maintained with anything like firmness. A recent adjudication for *materiel* required for the Belgian State Railways shows a fall in prices as compared with those current at the last previous adjudication; but as new types have been adopted for the plant ordered it is very difficult to make a precisely accurate comparison. Belgian casting pig has been maintained with some difficulty at 2*l.* 18s. per ton at Charleroi, and at 2*l.* 8s. per ton for the Athus-Halanzy group. The furnace proprietors of the Grand Duchy of Luxembourg intend, it is stated, to make an effort to place their production in Belgium; but it appears little likely that they will do so, as they would have to consent to a quotation of 1*l.* 17s. 6d. per ton in order to enable them to contend with Belgian products. Iron has been maintained upon the Belgian markets at 5*l.* per ton; the difference of 8s. per number appears to be rather nominal than real. Girders have been maintained at 5*l.* 4s. to 5*l.* 8s. per ton, but the demand has not been very active. Plates have been quoted at from 6*l.* 16s. to 10*l.* 16s. per ton, according to numbers and qualities.

No material change has occurred in the general condition of the Belgian coal trade. Deliveries have continued active, and it is satisfactory to see business in coal present so much firmness, while other industries cannot be said to be free from difficulties. Stocks of coal have assumed a certain importance in some localities. In other districts, on the other hand, the extraction has been rather considerably reduced in consequence of a scarcity of labour. In the Couchant de Mons the stocks of coal now on hand are stated to be about 15,000 tons less than they were in June, 1882. The condition of the coke trade is much less satisfactory than that of the coal trade, and some contracts are spoken of as having been concluded at extremely low rates. Household coal has been well maintained at an average of from 10s. 6d. to 12s. per ton, although in some districts as much as 12s. 10d. per ton has been obtained. The condition of the German coal trade continues favourable, and prices have been supported with firmness. This was shown at a rather important adjudication which took place recently at Magdeberg. There may, perhaps, be a slight falling off at present in large contracts for coal in Germany, but the collieries are generally well provided with orders. Deliveries of coal have continued very active upon the railways accommodating the basin of the Ruhr. In the second half of May the daily movement over these lines averaged 78,330 tons, as compared with 69,610 tons in the corresponding fortnight of 1882. The exports of coal *via* the ports of the Rhine have also been considerable of late.

MINERAL RESOURCES OF CANADA.—The discovery of a marvellously rich silver mine on the northern shore of Lake Superior, near Paipoonge, about 24 miles from Prince Arthur Landing—the Rabbit Mountain Silver Mine—is announced, the owners being Gen. Wild, Capt. Dan. McPhee, and Mr. Oliver Dounis, the discoverer. The Prince Arthur Herald states that during the winter they were opening a road from the mine to Point de Meuron, so that mining was not commenced until Feb. 14. Since then they have sunk a shaft, and commenced cross-cutting on the vein—a true fissure vein—which they have gone through to a width of 45 ft. without reaching the other wall. It is said that every particle of the rock—quartz and spar—taken out is fit for the stamp-mill, the contained silver being black sulphate and native—the purest silver there is—and the vein being free from the baser metals, and traceable for a considerable distance on the property in any part of which silver can be found in paying quantities. Only two miners have been at work, yet $100,000 worth of silver has been taken out in six weeks. In crossing the vein they discovered a vugh containing nuggets of black sulphate silver of from ½ lb. to 7 lbs. weight. From this vugh they could pick out the silver with their hands and shovels, without putting in a blast or actual mining, and have taken about $3500 worth of pure silver. The mine is paying for itself; the owners have worked with their own hands, and with their receipts will purchase machinery for the future working of the mine.

IRON TRADE PROGRESS IN ENGLAND AND ON THE CONTINENT.—The annual statisticts and reports which have recently been published as to the condition and progress of the iron trade in the different countries of Europe show, says the Daily Recorder of Commerce, that industry to be in a remarkably healthy state. It is marked everywhere by an activity which nowhere becomes feverish, and prices, while far from being inflated, maintain a steady level far above the point of deadness. When we consider in how many enterprises and in what extensive manufactures iron forms a prime factor we have reason on our side when we conclude that a vigorous manifestation of strength on its behalf augurs well for the soundness and prosperity of commerce generally. A glance at the trade of one or two countries may prove instructive, and teach lessons of value without a very deep dive down into these questions. Belgium, for instance, is a country which has a well-sustained pre-eminence in iron industries. She has an import duty on pig-iron of 5 fr. per ton, to which is attributed the declension in her imports of raw pig-iron. In France we find the new tariffs coming into operation in May. These sensibly reduced the import burden, pig-iron, for instance, being charged 15 fr. instead of 20 fr. These reductions operating through half the year only appear to have been unfavourable to French industry; for, while the imports and make have increased enormously, the exports are almost stationary. The imports of pig-iron, manufactured iron, and steel increased from 385,000 to 461,000 tons, and the home production rose from 3,344,000 to 3,551,000 tons. Germany, the great rival of France, has become rabidly protectionist during the last few years, and complains loudly that the higher duties are ruining her iron trade. Certainly prices have fallen heavily, while production has enormously increased. The out-turn of all kinds of the blast-furnaces was 3,188,000 tons in 1882, against 2,620,000 in 1881, and 2,129,000 in 1880. But against this we have a fall in value of 15 per cent. in white forge, 10 per cent. in steel rails, and others in proportion between January and December, 1882. Sweden, on the contrary, lays claim to great prosperity, increased make, increased exports, and higher prices.

A LUCKY CANADIAN.—An inspector of the Canadian Mounted Police is said to have realised 60,000*l.* by selling out his share in a gold mine recently discovered at Medicine Hut, in the North-west Territories.

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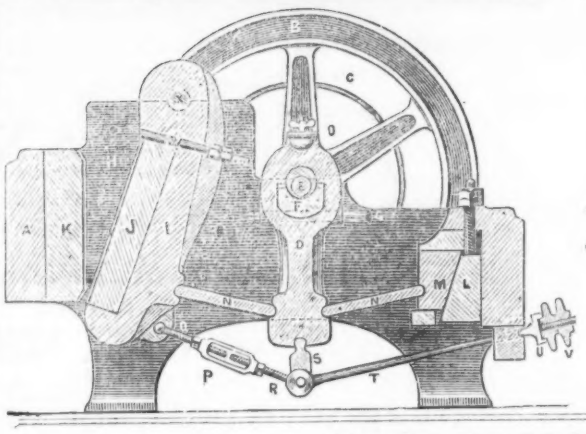

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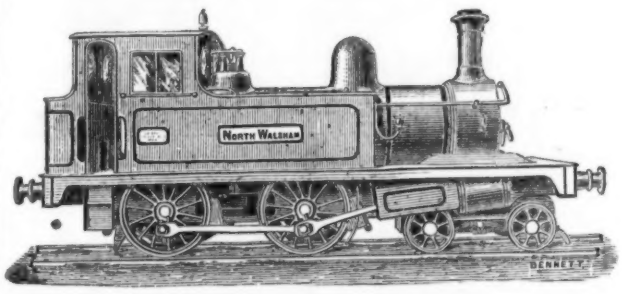

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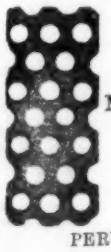

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A LARGE DIAMOND.—Advices recently received from Kimberley state that a mining company of Dutoitspan has found a yellow diamond weighing 273½ carats.

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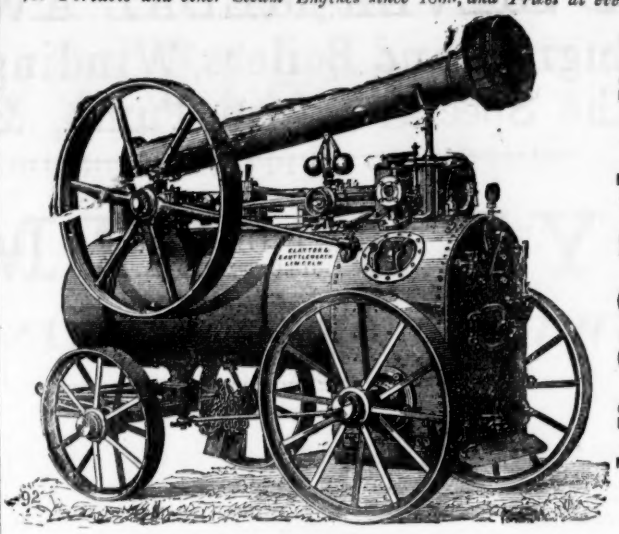

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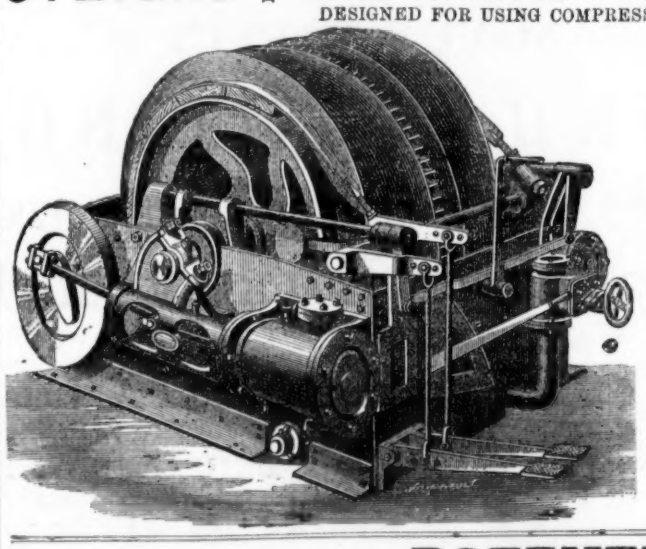

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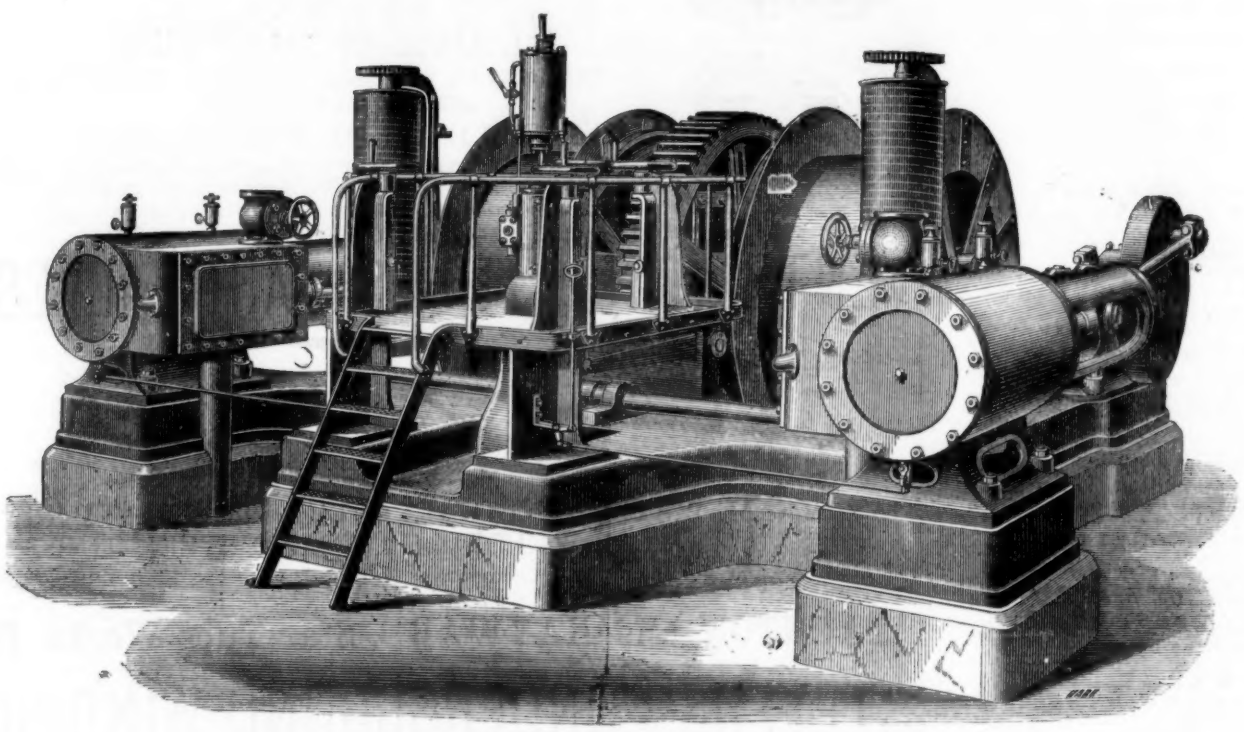

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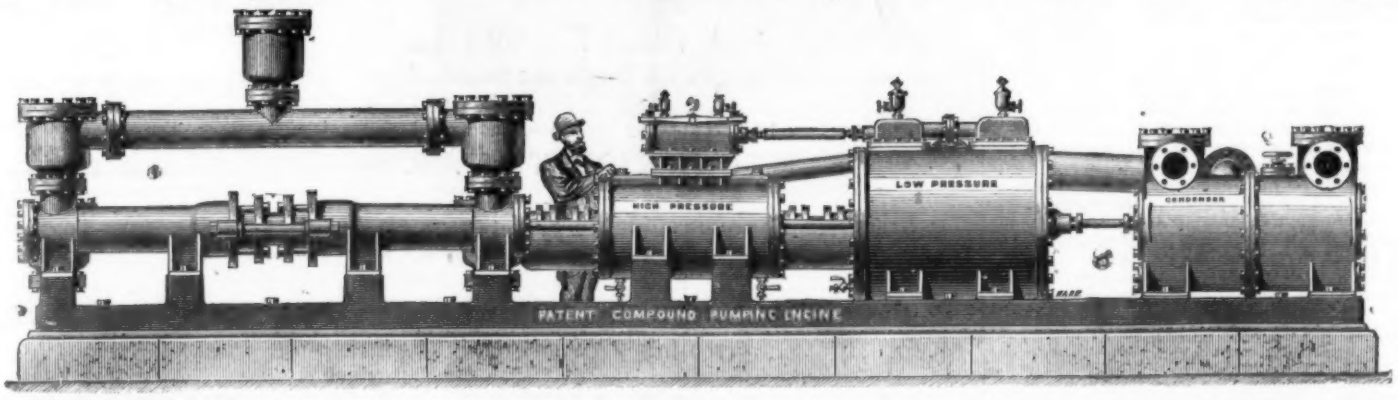

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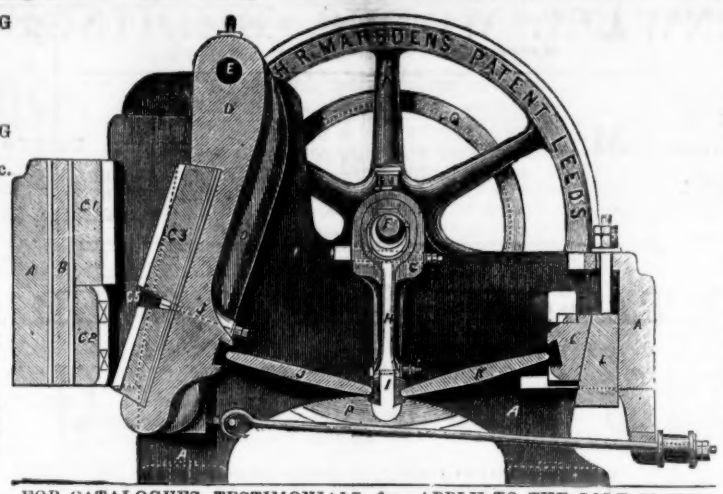

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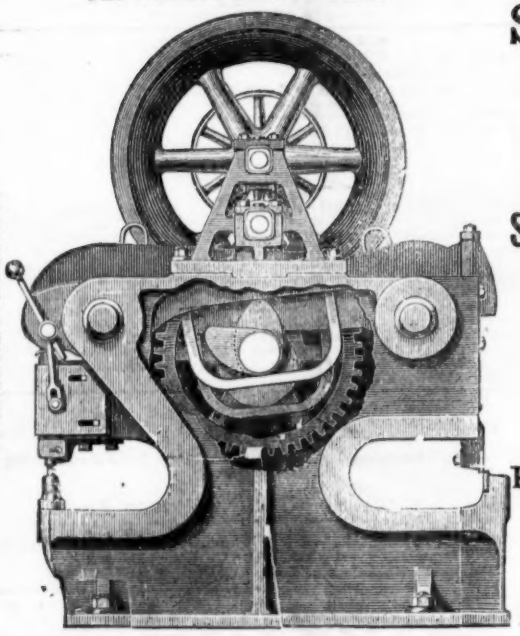

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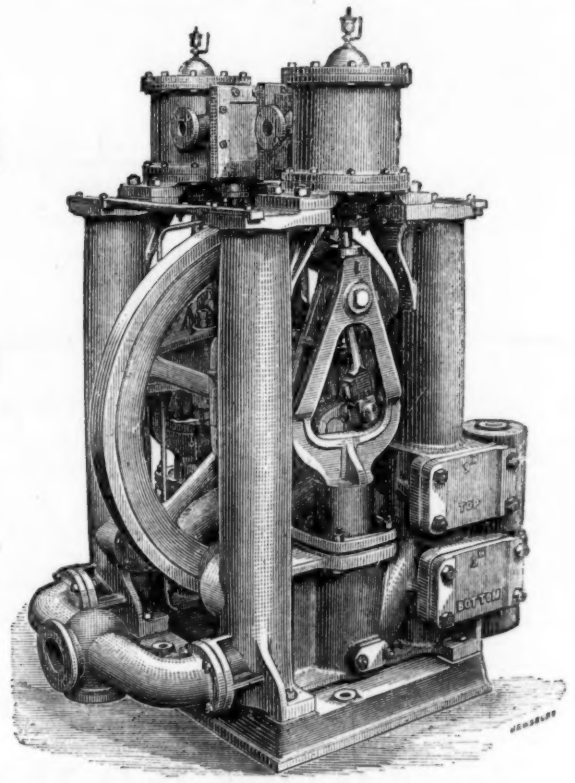

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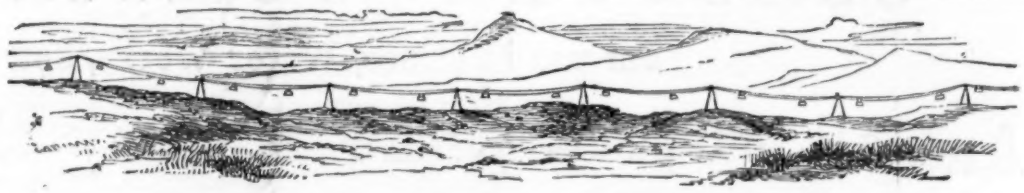

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